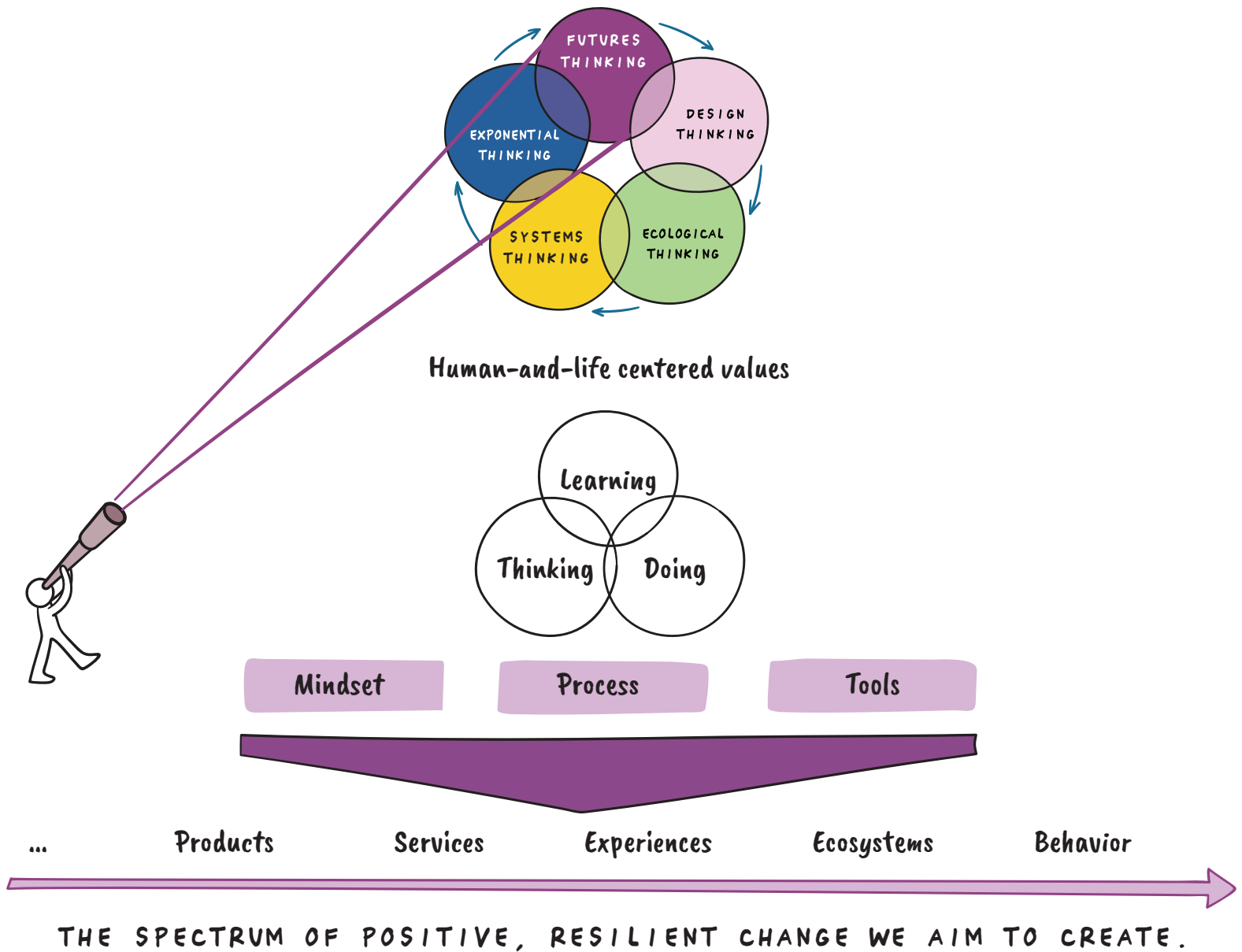


FUTURES THINKING

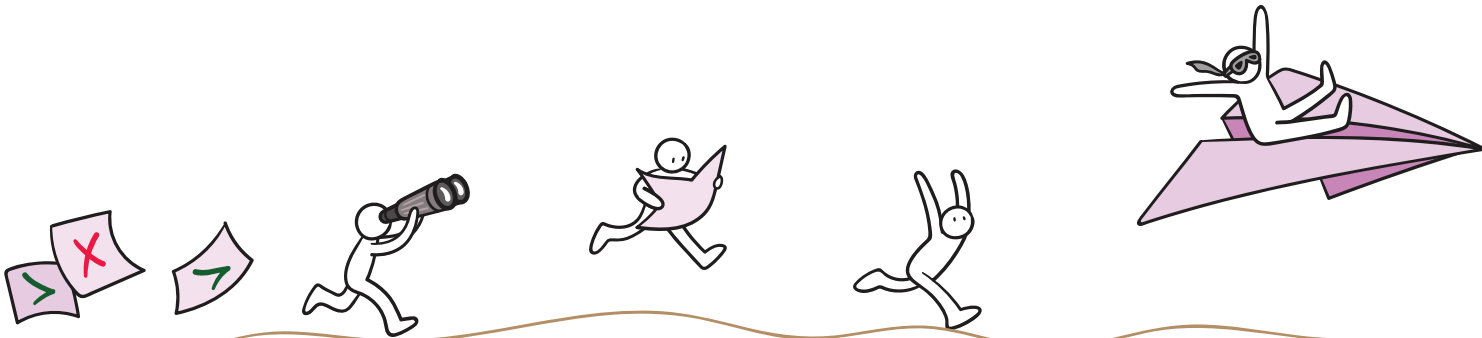




Doing Futures and Foresights

Futures thinking encourages exploration of possibilities through the strategic use of “what if...” and “imagine that...” questions, fostering a future-oriented mindset. These imaginative exercises allow us to **envision optimistic preferable futures**, identify potential pathways to achieve them, and inspire action toward creating a better world. However, futures thinking, as a starting point for Design Thinking for Humanity, goes beyond the desirable future. It blends insights, foresights, and futures studies with practices from psychology, all filtered through the lens of the design thinking mindset.

This iterative process involves developing artifacts of the future and exploring various possible opportunities through a dynamic interplay of discovery and decision-making. Futures thinking is not about predicting the future. It is about illuminating the potential, often unexpected, implications of today’s problems. This illumination empowers individuals, policymakers, and organizations to proactively shape all imaginable futures, the so-called “possible” futures. The focus shifts from predicting what will happen to exploring what might happen, given various observed factors. It includes even events that current research would not (yet) be able to explain.



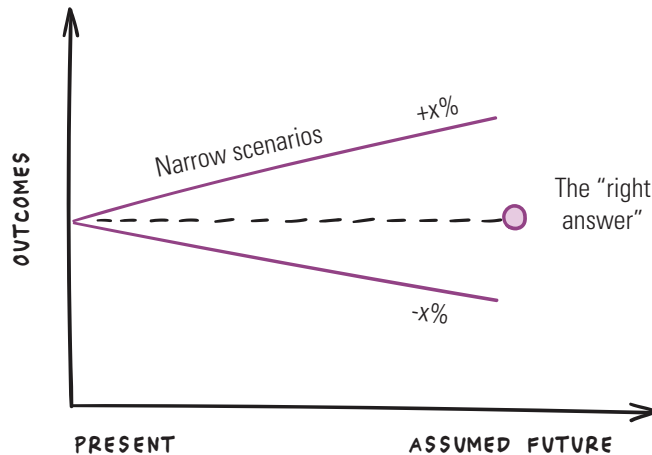
[Design thinking in combination with futures thinking is a proactive, iterative process that starts with “what if” and “imagine that” scenarios to explore possible futures, not to predict them but to illuminate the implications of present-day problems and inspire action toward creating positive impact on both people and the planet.]

From Prediction to Possibility

Many organizations, when planning for the future, focus on prediction. This approach is suitable only for narrow questions where all parameters are known and static, allowing for a single, precise forecast. However, in an era of exponential change, most critical challenges involve numerous unknowns, making any single prediction an unreliable guide. Futures

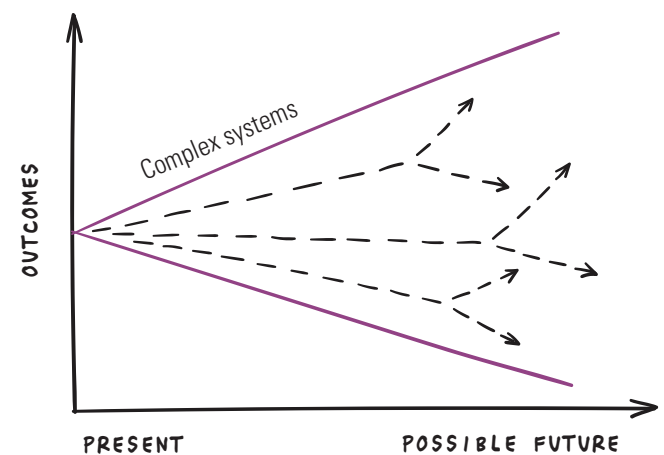
thinking, therefore, requires a fundamental shift in perspective: we must move from the assumed certainty of a single **predicted future** to an exploration of the full range of **possible futures**. This means embracing uncertainty and preparing for a diverse set of outcomes rather than a single, predetermined path.

PREDICTION (THE ASSUMED FUTURE)



- Seeks a single "right" answer
- Assumes all parameters are known and static
- Best suited for narrow, stable scenarios

FUTURES THINKING (POSSIBLE FUTURES)



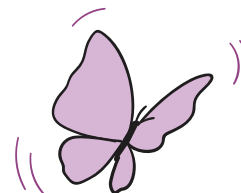
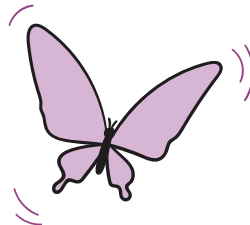
- Navigates multiple unknowns and complex systems
- Explores a broad range of plausible outcomes
- Builds resilience and adaptability for diverse possibilities

Embracing Uncertainty: Black Swans and Butterflies

Small events trigger massive consequences in our highly interconnected world. We often call this the butterfly effect. We must navigate this unpredictability. We recognize the different types of knowledge and ignorance we face. We use the following framework to audit our honest position. It breaks these down into four categories to assess what we truly know.

The **Strategic Awareness Framework** (see page 59) identifies our certainties first. These situations occur where External Evidence Exists and We Feel Certain (**Known Knowns**). We have facts and evidence on hand here. We contrast these with identifiable risks. Here External Evidence Exists but We Feel Uncertain (**Known Unknowns**). We are aware of risks like market shifts or new regulations but cannot predict their specific impact. We actively plan for these foreseeable uncertainties.

The more challenging categories force us to look deeper. Hidden biases represent assumptions where We Feel Certain but External Evidence is Missing (**Unknown Knowns**). Our mental models fail us here. We believe we understand a situation when we actually lack the data. We finally face the true surprises. These black swan events lie where External Evidence is Missing and We Feel Uncertain (**Unknown Unknowns**). They exist outside our current experience. We admit this category exists. We take the first step toward building genuine resilience against future shocks.



The Strategic Awareness Framework

	External Evidence Exists (known)	External Evidence Missing (unknown)
WE FEEL CERTAIN (known)	Descriptor: Certainties Core Idea: The facts and evidence we currently possess. Strategic Stance: Leverage and build upon this established knowledge.	Descriptor: Hidden Biases & Blind Spots Core Idea: The unconscious assumptions and flawed mental models that make us believe we understand a situation when we do not. Strategic Stance: Challenge assumptions and actively seek diverse, outside perspectives to reveal these blind spots.
WE FEEL UNCERTAIN (unknown)	Descriptor: Identifiable Risks Core Idea: The risks and variables we know exist but cannot fully predict. Strategic Stance: Actively plan and prepare for these foreseeable uncertainties.	Descriptor: Unforeseeable Disruptions Core Idea: The “black swan” events that are impossible to predict because they lie outside our current experience. Strategic Stance: Build genuine, systemic resilience to be able to adapt and transform in the face of true surprise.

Acknowledging these different forms of uncertainty is the first step toward building genuine resilience against future shocks. This leads to a fundamental principle for innovators and leaders:

The goal is not just to prepare for the risks we know, or to withstand the shocks we can imagine, but to build a system that grows stronger from the surprises we cannot.

This principle pushes us beyond mere resilience. While a resilient system is designed to withstand disorder and bounce back to its original state, an **exponentializing** system is one that actually gains strength from shocks, volatility, and uncertainty. Just as human muscles grow stronger from the stress of exercise, an exponentializing system (see pages 40–41) is designed not just to endure the unpredictable but to thrive because of it.

Applying the Vision Cone

The Vision Cone visualizes the entire landscape of what lies ahead. It moves outward from the certainty of the present day through expanding layers of uncertainty. This helps us categorize and make sense of the full spectrum of possibilities. This is not a tool for prediction. Instead, the cone acts as a framework for exploration to ensure strategic conversations remain imaginative and well-grounded. Understand the different layers to move beyond reacting to obvious trends and proactively shape the future you desire.

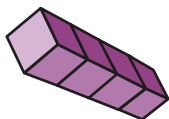
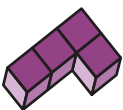
The Vision Cone forms the foundational framework for many tools in this toolbox (see Futures Thinking Toolbox, pages 76–117). It provides the canvas upon which we paint all subsequent futures and foresight work. Activities like Horizon Scanning and PESTLE Analysis gather the signals and trends that populate the different layers of the cone. The Probability/Impact Matrix then helps us prioritize these signals. We identify which ones have the power to push us toward or away from a specific future. The cone gives these disparate pieces of information a home and a context.

Once we map the landscape, the Vision Cone becomes a powerful engine for ideation and strategy. We build the most compelling stories for Scenario Planning by exploring the tensions between different plausible futures within the cone. Use Creative Mash-Ups and the Futures Wheel to generate innovations that are resilient across multiple possible futures, not just the most probable one. **The Vision Cone ensures creative work stays tethered to reality and responds directly to the full spectrum of what lies ahead.**

The Vision Cone connects the future back to the present. Identify a “preferable future” within the cone first. Then use tools like Backcasting and Future-Ready Roadmapping to chart a course from that desired destination back to the actions we must take today. This transforms foresight from a passive academic exercise into a dynamic, actionable strategic practice. It provides a clear answer to this question: Knowing what is possible, what should we do now to build a better world?

!

- Map the full spectrum of possibilities to define a clear “preferable future” that serves as your strategic North Star.
- Avoid the trap of a single “projected future” by exploring the full spectrum of plausible and possible futures to understand all risks and opportunities.
- Identify systemic tensions between different futures to reveal the barriers you must overcome.
- Connect your preferable future to the present by using tools like Backcasting to map the necessary steps, policies, and innovations required.



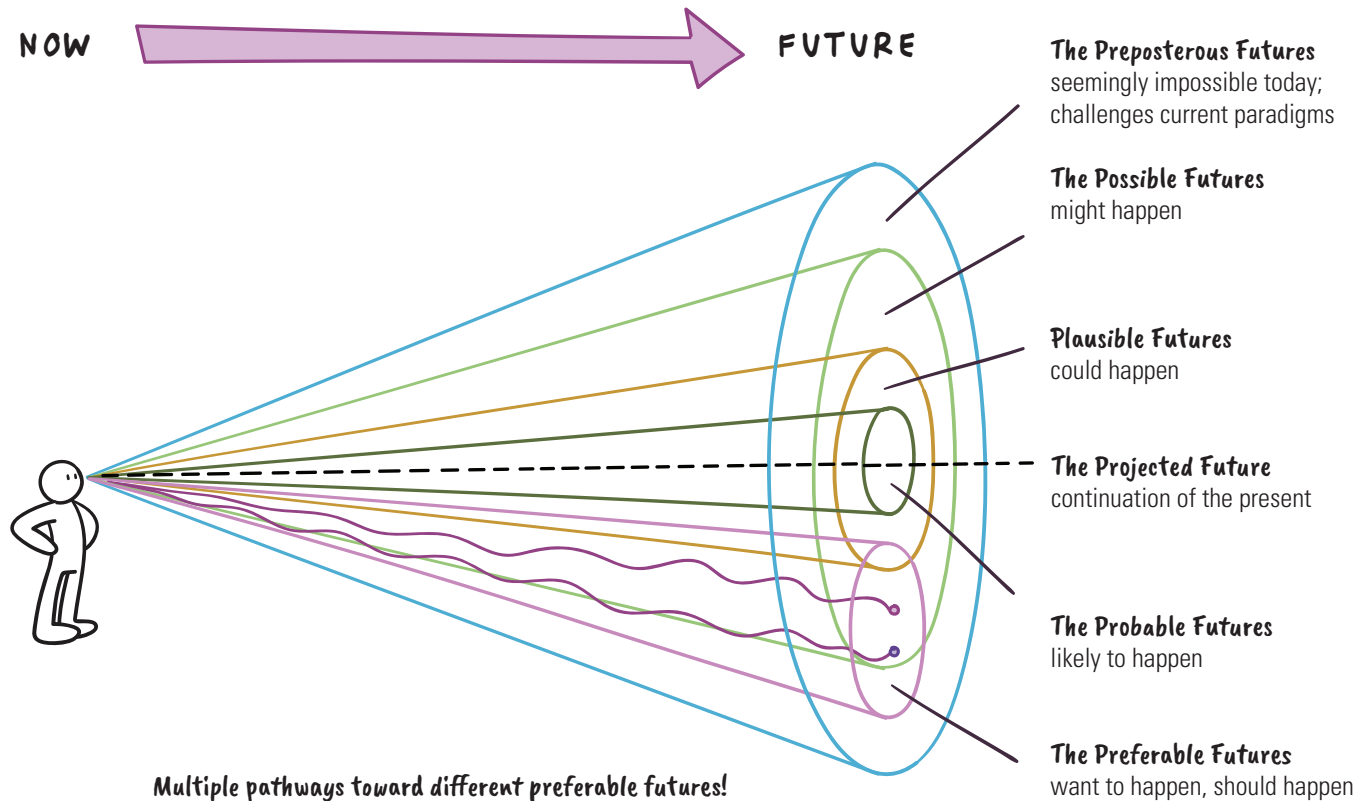
The Vision Cone

Tool



The Vision Cone serves as a powerful tool for Design Thinking for Humanity practitioners. It allows us to explore the full spectrum of potential futures intentionally rather than being limited to a single projected path. We diverge from immediate assumptions about what the future will be. This opens up space **to consider all possible futures, ranging from plausible to preferable**. However, “preferable” means more than just organizational preference.

It represents a future that optimizes human well-being, equity, and ecological regeneration. This comprehensive exploration ensures our solutions remain robust and adaptable. They truly resonate with diverse needs and evolving societal landscapes. **This ultimately leads to more impactful and sustainable innovation.**



Core Principles of Futures Thinking

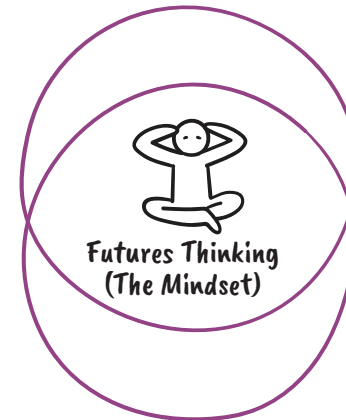
Futures thinking in the context of Design Thinking for Humanity is the appropriate paradigm because it:

- **Enables us to explore a range of possible futures.** We look at organizations, products, services, and processes beyond immediate needs to consider long-term impacts and possibilities.
- **Facilitates the evaluation of these possible futures.** This allows us to ascertain which futures are most desirable for humanity and the planet. We understand the underlying values and principles that make them so.
- **Supports us to identify strategic decisions and actions.** We increase the likelihood of achieving those desirable outcomes. We shift from reactive problem-solving to proactive future-building.
- **Bridges the gap between understanding deep human needs and envisioning long-term possibilities.** Design thinking understands the needs; futures thinking envisions the possibilities. This ensures that design solutions are both relevant and sustainable.
- **Allows us to reveal the potential, often unexpected, implications of current problems.** Rather than predicting the future, we empower ourselves to address problems in ways that contribute to a more positive and resilient future.

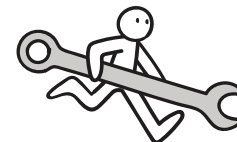
Futures thinking has become an integral part of Design Thinking for Humanity. It paves the way for quality long-term thinking. Design thinking provides the foundation for understanding deep human needs and exploring appropriate problem spaces. Futures thinking injects an essential forward-looking perspective.



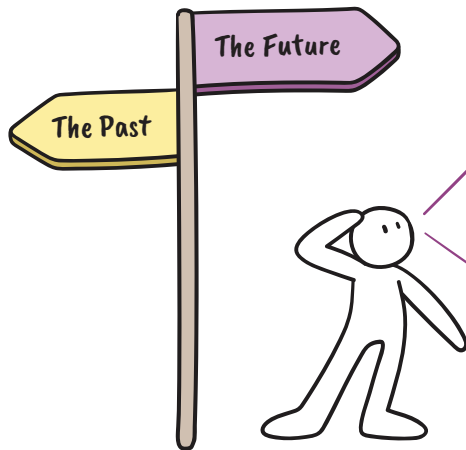
**Futures Studies
(The Academic Foundation)**



**Foresights
(The Analytical Practice)**



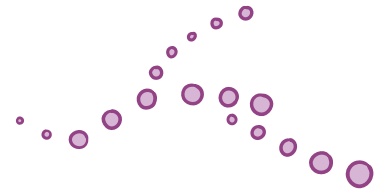
Reject the single, predetermined path. Embrace uncertainty to create possible future worlds. Your choices today shape the reality of tomorrow.



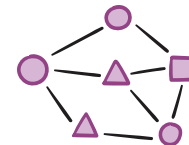
Creating **possible** future worlds



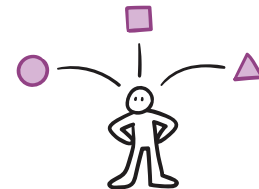
The Future Is Unpredictable,
Not Predetermined



The Future Is Plausible,
Not Singular



Individual and Collective
Choices Shape the Future



Understanding Potential Futures
Empowers Present-Day Action

Facilitating Future-Oriented Design

Facilitating future-oriented design is the practical art of guiding a team from long-term, abstract possibilities to concrete, present-day action.

The facilitator acts as the steward of the Future-Forward Design Process (see page 65). They create a structured yet flexible environment where teams safely explore potential futures, challenge their own assumptions, and build a shared, resilient vision. This requires skillfully managing the inherent uncertainties and human biases that challenge foresight work.

The facilitator guides the team through the five phases of the process, intentionally creating conditions for both divergent and convergent thinking. In divergent phases, such as Futures Immersion & Empathy, the facilitator fosters expansive, imaginative exploration. They apply specific tools from the toolbox to encourage the team to question mental filters and conceive truly novel futures. This moves the team beyond the “predicted future” that often limits innovation.

In convergent phases, such as Future Framing & Problem Definition, the focus shifts to guiding the team toward clarity and commitment. The facilitator synthesizes vast amounts of information and identifies emerging patterns. **While AI collaborators can analyze data, the human facilitator remains the crucial sensemaker.** They interpret ambiguity, weigh complex ethical and cultural nuances, and help the team build a shared, meaningful understanding.

Decision-makers in traditional settings tend to focus on ‘the predicted future’ that unfold gradually from current patterns.

A core responsibility is creating an environment of profound psychological safety. Exploring potential futures, especially disruptive or dystopian ones, can provoke anxiety. The facilitator must create a safe space where participants confront these challenges without fear. By acknowledging emotional responses and framing exploration as a creative exercise, the facilitator transforms potential resistance into a powerful source of insight.

The facilitator orchestrates a team’s journey into the future. By applying the right tools at the right time and holding the team accountable to the work’s principles, **they transform foresight from a passive academic exercise into a dynamic engine for creating a more resilient and thriving future.**

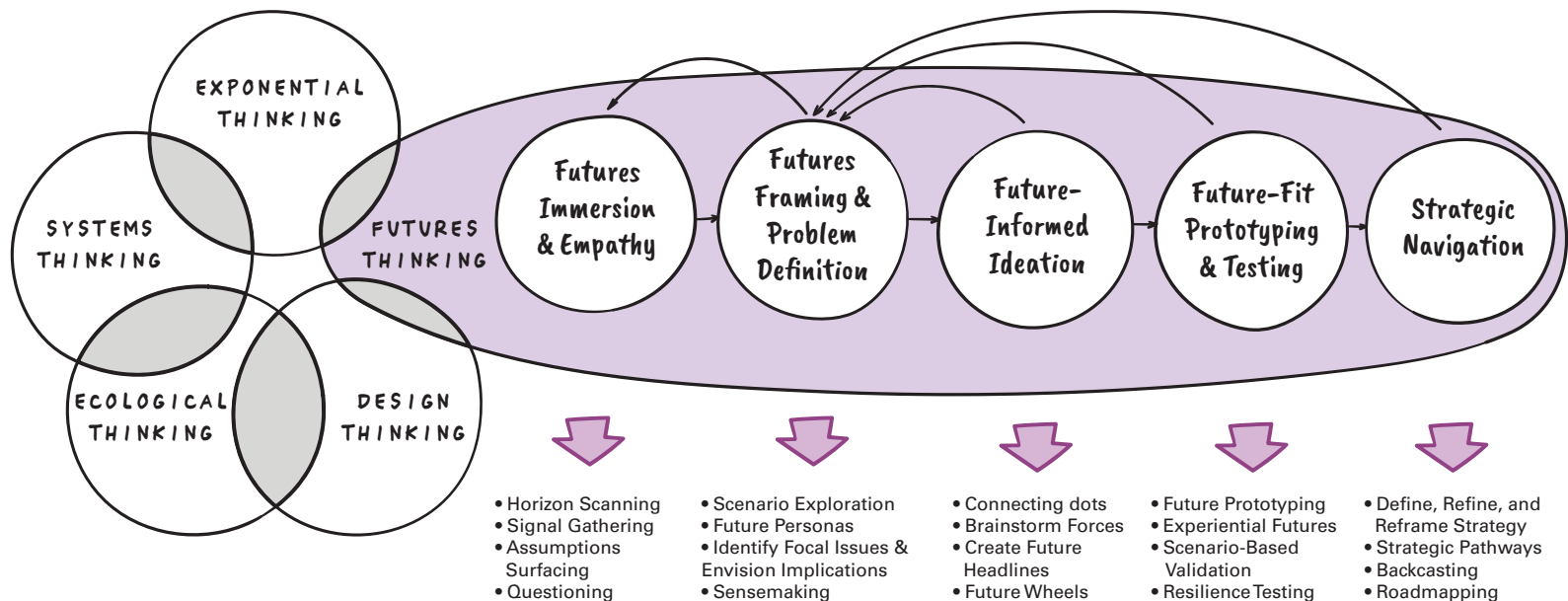
Facilitators’ Actions!

- Facilitate transdisciplinary workshops that bring together diverse experts from science, design, and the humanities to co-create novel solutions.
- Build collaborative networks by actively connecting enterprises, policymakers, and communities to drive shared, real-world impact.
- Coach new leadership mindsets that prioritize long-term resilience over short-term gains and empower decentralized teams to respond to change.
- Design and integrate Design Thinking for Humanity into all learning agendas to build the skills and capabilities needed to initiate massive change.

The Future-Forward Design Process

Traditional innovation processes often trap us in the present. They optimize for current user needs but ignore the approaching waves of disruption. **To architect a resilient future, we must change our starting point.** We cannot simply iterate on what exists today. We must anticipate the context of tomorrow and define where we are going before we decide what to build. This approach ensures that we do not stop at an abstract vision. We conclude with a real strategic pathway that bridges the gap between our future ambition and today's execution.

The core of the Future-Forward Design Process is the **integration of futures thinking and design thinking.** This combination enables us to explore future possibilities and effectively address today's challenges. In the Foresight phase, we do not empathize with a user yet; we empathize with the future. We scan for signals and map scenarios to define a preferable future. **This vision becomes the North Star.** We reverse-engineer solutions that are not just desirable for users today but resilient and sustainable for the decades to come.



From Vision to Reality

We navigate the transition from foresight to execution through five strategic phases. This framework ensures we do not get lost in the abstraction of the future or the myopia of the present. Each step requires a specific mindset and a dedicated set of tools (see pages 76–117) to ensure that our long-term vision translates into immediate, impactful action.

Phase 1: Futures Immersion & Empathy

This initial phase involves a thorough investigation into signals, trends, human behaviors, and needs. It requires a deep analysis to uncover underlying biases, unquestioned assumptions, established systems, and the core values or pervasive myths that shape a worldview. By illuminating these foundational layers, a more nuanced and realistic picture of potential futures is constructed, moving beyond simplistic or overly optimistic projections.

Phase 2: Future Framing & Problem Definition

Building upon this foundational understanding, the next phase synthesizes these insights. It involves a careful examination of emerging trends, observed disruptions, and ongoing transformations related to a specific focal issue. This stage emphasizes pattern recognition and developing a deeper comprehension of the forces at play, which helps to frame human-centered problems within a future context.

Phase 3: Future-Informed Ideation

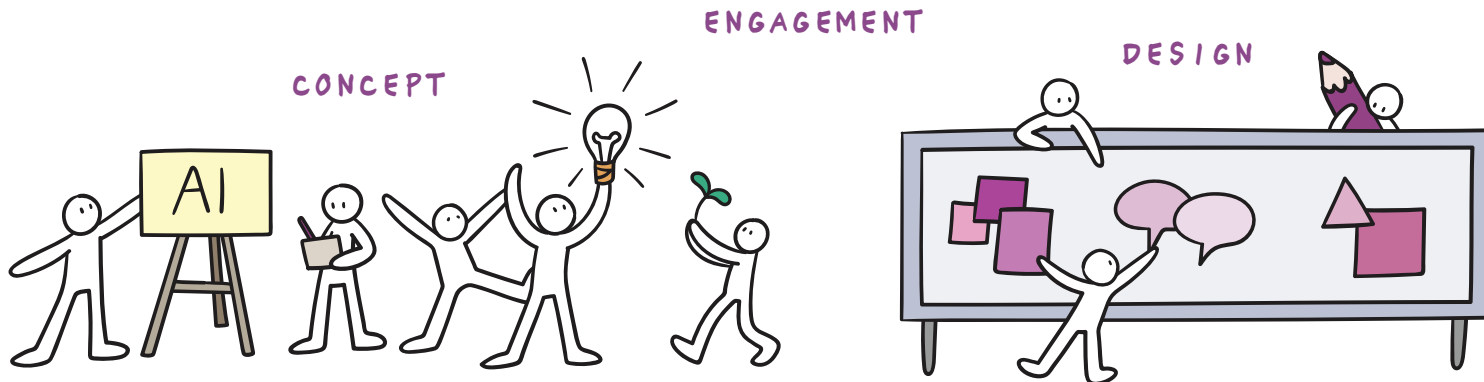
This phase applies various ideation techniques and powerful “what if” questions to enable divergent thinking. By leveraging the insights gathered from the future framing stage, a wide range of innovative solutions can be generated. These solutions are not only relevant for today but are also designed to be adaptable to various potential future scenarios.

Phase 4: Future-Fit Prototyping & Testing

The diverse scenarios explored in earlier stages become the basis for this phase. “Prototypes” are constructed that reflect different potential future worlds and the artifacts that might exist within them. This approach allows concepts to be tested against multiple alternative future scenarios, gaining valuable insights into their resilience and desirability.

Phase 5: Strategic Navigation

Finally, the insights gained from exploring these future possibilities are translated into actionable strategies and visions for the present. This translation process guides the creation of preferred outcomes and helps build resilience against the inherent uncertainties of the future, ensuring all solutions are both robust and forward-looking.



Applying Futures Thinking at Multiple Scales

Futures thinking methods adapt to any challenge. Do not limit them to a single context. **Use this versatile framework to address the full spectrum of issues.** Scale your approach from complex, global “wicked problems” down to focused national and local initiatives. At the global scale, tackle deeply interconnected challenges like climate change, societal polarization, or the human-AI relationship. Apply the long-term, holistic perspective of futures thinking to anticipate cascading consequences across systems. Design truly resilient interventions rather than temporary fixes.

Futures thinking applies fractal principles to challenges of varying scope.

Global Scale: Tackle quintessential wicked problems like climate change, societal polarization, or the future of the human-AI relationship. These interconnected challenges require a long-term, holistic perspective to anticipate cascading consequences and design truly resilient interventions.

National Scale: Drive initiatives like public health and well-being improvement. Move beyond reactive health-care systems to envision proactive “health-care” models. Explore future scenarios for personalized medicine and design interventions that encourage preventative behaviors. Create resilient infrastructures adaptable to demographic shifts or pandemics.

Local/Community Scale: Enhance urban resilience. Cities can explore the future of local food systems, urban mobility, or community connection. Engage citizens in collaborative processes to envision a preferable future. Leaders co-create initiatives like community garden networks, modular transport systems, or digital platforms that foster local bonds.

When addressing a global challenge like climate change and its cascading crises, begin with deep, systemic empathy for diverse impacts on communities and ecosystems. **Reframe broad challenges into specific, actionable problems.** Design circular economy models for specific industries or develop resilient water management systems for vulnerable regions. Ideate and prototype radical solutions that integrate new technologies, policy shifts, and behavioral changes. Maintain a long-term view to ensure environmental and social sustainability.

The focal points for this work vary as widely as the challenges themselves.

Specific Company: Focus on the “Future of Employee Engagement and Well-Being in an AI-Driven Hybrid World.” Use foresight to design human-centric organizational models.

Industry Level: Tackle “Achieving True Circularity in Manufacturing.” Use scenario planning to map required technologies, supply chains, and business models.

Startup Level: Focus on “Building Trust and Ethical AI” in a niche product. Use foresight to anticipate and mitigate potential user harm in applications like personalized mental health tools.



Journey Through the Five Lenses: The Living Soil Mandate

Bring concepts to life with a practical design challenge. Follow **the Living Soil Mandate** through the upcoming chapters. Design a global regenerative model that makes topsoil health the primary success metric by 2050. Apply tools from all five disciplines to build a scalable solution. **Review the summarized results in the Resilient Blueprint on page 280.**

Futures Thinking (pages 69–75): Setting the Direction

Exploring the future landscape of agriculture and economics. This phase involves scanning for weak signals, building four distinct future scenarios (from “Regenerative Abundance” to “The Great Dust Bowl”), and identifying a clear, “preferable future.”

Key Tools Applied:

Horizon Scanning
Scenario Planning & the 2x2 Matrix
Creative Mash-Up

Exponential Thinking (pages 277–279): Scaling for Global Impact

Designing the strategy to scale the solution globally. This involves understanding the technological growth curves, creating a purpose-driven movement, and ensuring the scaled solution remains ethically aligned and socially beneficial.

Key Tools Applied:

The 6 Ds of Exponentials
Massive Transformative Purpose (MTP)
Movement Catalyst Design

Design Thinking (pages 137–141): Grounding the Vision in Human Needs

Transforming the long-term vision into a human-centered solution. This involves creating a Future Persona (Javier, the farmer), framing a Wicked Problem, ideating the “Carbon Harvest” platform, and testing it for ethical consequences.

Key Tools Applied:

Future Persona
Wicked Problem Framing
Ethical Consequences Scanner

Systems Thinking (pages 237–241): Architecting the Ecosystem

Moving from a single solution to designing the entire collaborative network. This involves mapping the feedback loops that drive the system, identifying leverage points, and creating the “win-win-win” business ecosystem that connects farmers, corporations, governments, and the planet.

Key Tools Applied:

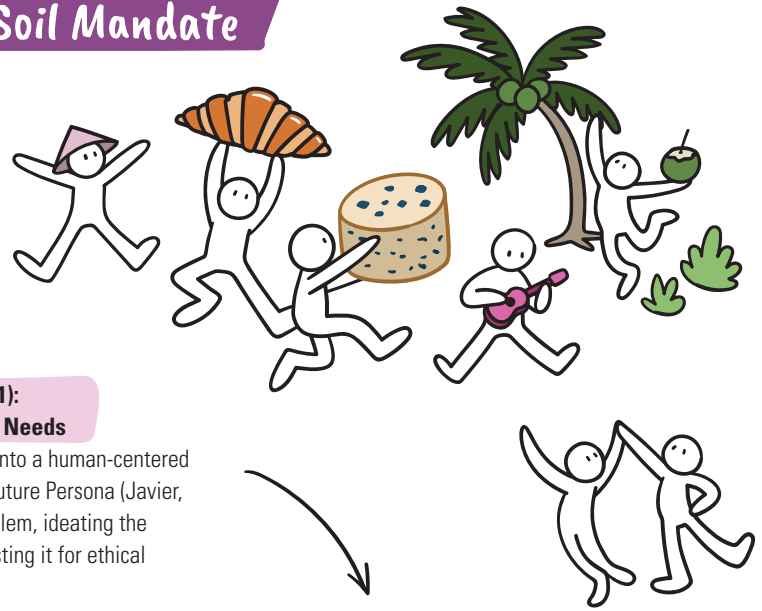
Causal Loop Diagramming (CLD)
Leverage Points Analysis
“Win-Win-Win” Business Ecosystem Canvas

Ecological Thinking (pages 198–201): Designing for Regeneration

Ensuring the solution is not just sustainable but actively regenerative. This involves analyzing the solution’s material footprint and designing its business model and behavioral nudges to be in harmony with natural systems.

Key Tools Applied:

Life Cycle Assessment (LCA) Simplified
The Doughnut Economics Model
Sustainable Behavior Design



Part 1:

A Speculative Case Study:

Applying Futures Thinking

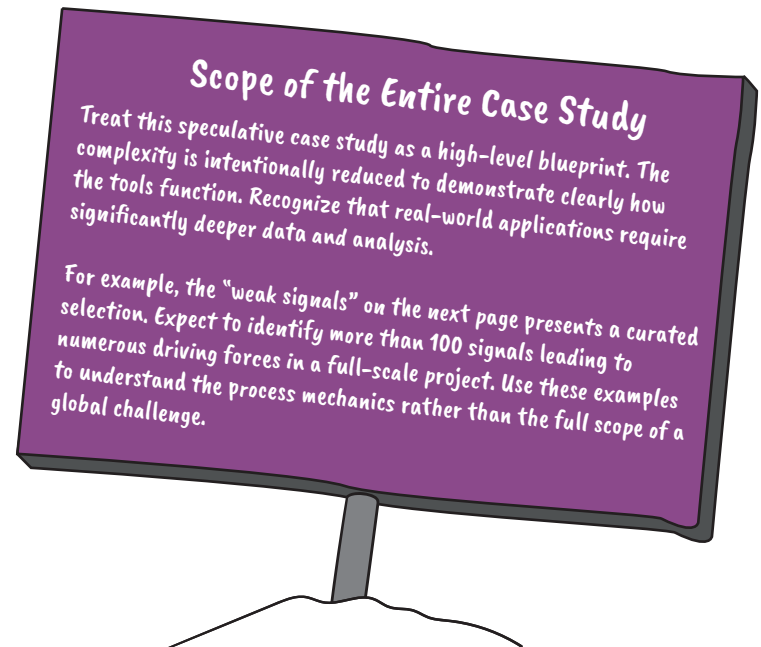


This case study demonstrates how futures thinking serves as the initial, critical step in tackling a complex, systemic challenge. Before designing solutions, we must first deeply understand the landscape of tomorrow. We use foresight not to predict what will happen but to uncover the weak signals and megatrends that point toward what could happen. This exploration grounds our subsequent design work in reality rather than assumption.

The overarching goal for our case study is both ambitious and essential.

The Living Soil Mandate

Our objective within this challenge is to design a new global economic and agricultural model that makes the regeneration of the world's topsoil the primary measure of agricultural success, ensuring long-term food security, reversing climate change, and restoring biodiversity by 2050.



Phase 1: Future Immersion & Empathy

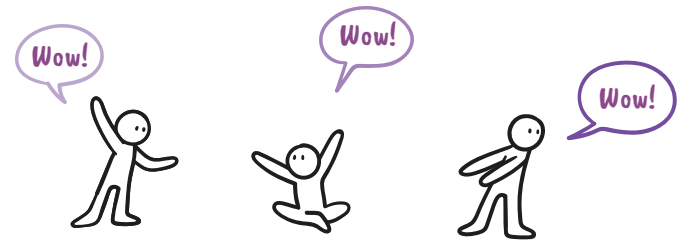
The first step in tackling this grand challenge involves a deep immersion into the present landscape to understand the forces at play. Scan for signals of change, understand long-term megatrends, and engage with diverse perspectives through deep inquiry.

Collecting and Clustering Weak Signals

Futures thinking prompts us to scan the “fringes” of society to identify weak signals of potential future change. Observe unusual developments to gain insights into emerging trends that might eventually impact our design domain.

- **Ambiguous and subtle:** These signals are not yet mainstream or obvious.
- **Potentially significant:** They carry the seed of major disruption or opportunity.
- **Require interpretation:** They demand that we connect the dots to see patterns.

- What unconventional things are happening globally today?
- What forces are driving these developments?
- Why are these signals intriguing, and what future implications might they hold?
- How could these seemingly disparate signals potentially apply to the domain we are designing within, revealing unexpected opportunity areas?



Weak Signals (Small Selection):

A consortium of food companies invests in a satellite platform to monitor soil carbon levels in real time.

A new “soil microbiome” health test for farms becomes commercially available.

A fashion brand launches a clothing line made from fibers grown using regenerative agricultural practices.

The government of a small nation officially includes “Natural Capital” in its national accounting.

A popular health documentary links human gut health directly to the soil health where food is grown.

Clustering into Potential Driving Forces:

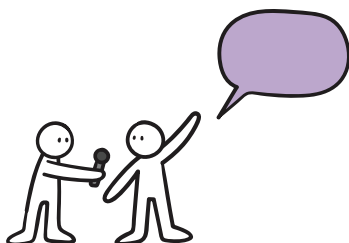
- **The Soil-Health Nexus:** A growing scientific and public understanding of the direct link between soil health, human health, and climate stability.
- **Verifiable Regeneration:** The emergence of new technologies that can transparently and affordably measure ecological outcomes like soil carbon.
- **The Bio-Economy:** A shift toward agricultural products being seen as the feedstock for everything from fashion to construction materials.
- **New Economic Models:** The exploration of economic models that account for the value of nature.

Understanding Megatrends

Weak signals do not exist in a vacuum. They serve as early indicators of the profound, long-term shifts reshaping our world. Understand these megatrends. They act as the fundamental drivers shaping the plausible futures we might inhabit. Frame our challenge against powerful megatrends like accelerating climate change, increasing global food insecurity, and the growing crisis in public health related to diet.

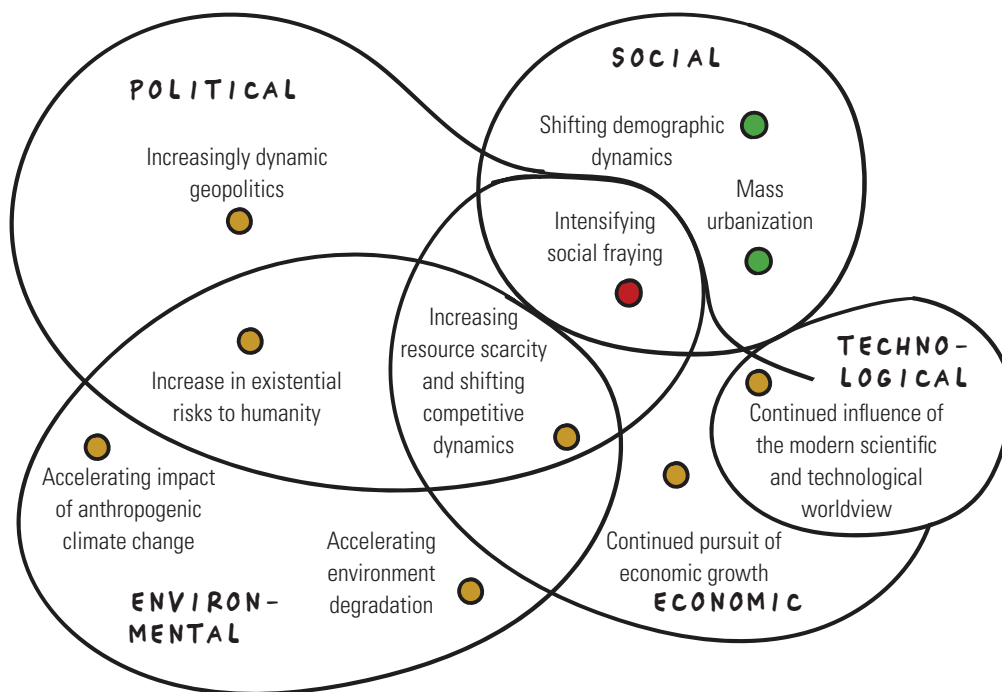
Some megatrends started 10,000 BCE and others, like the increase risks to humanity, in the 1970s.

Level of confidence High ● Medium ● Low ●



Engaging Experts with Hybrid Questions

To deepen our understanding, we must engage with a diverse range of experts, from scientists and economists to community activists and indigenous leaders. Hybrid interviews, which blend structured and unstructured questions, are a potent technique for this.



Example of Powerful Questions for an Expert on Planetary Balance:

- **Farsighted:** "If you could speak with an oracle from 2050, what three things would you want to know about the state of the world's soil?"
- **Optimistic Scenario:** "If humanity were to successfully regenerate the majority of its agricultural soils by 2050, what would be true of our food systems?"
- **Pessimistic Scenario:** "If our soils were to continue to degrade, what might be the single most catastrophic, unforeseen consequence?"
- **System Constraints:** "What is the single most powerful force that is currently preventing the widespread adoption of regenerative agriculture?"
- **Leverage Points:** "What is the single most important intervention we could make in the next five years to accelerate the transition to a soil-first food system?"

Phase 2: Future Framing & Problem Definition

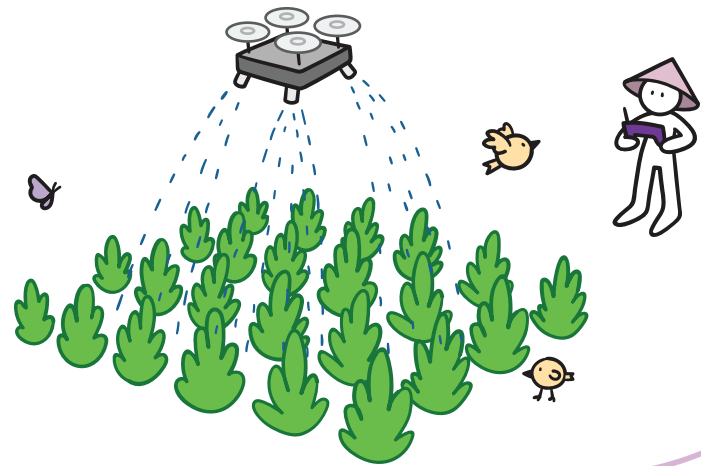
Next, build a set of distinct, plausible future scenarios upon this foundational understanding. Treat them not as predictions but as narratives. Use them to stress-test strategies and identify robust pathways toward the goal.

Scenario 1: “Regenerative Abundance” (Optimistic): A global awakening to the soil crisis leads to a massive, coordinated shift. Regenerative agriculture becomes the global norm, driven by a combination of strong policy, consumer demand, and technological breakthroughs. Food is abundant, nutritious, and a primary tool for carbon sequestration.

Key Drivers: Strong political will; widespread consumer awareness; breakthroughs in soil science and monitoring technology.

Economic Model: A regenerative, circular bio-economy where farmers are rewarded for ecological outcomes (carbon sequestration, biodiversity) as well as for food production.

Challenge: Scaling regenerative practices globally and ensuring an equitable transition for all farmers.

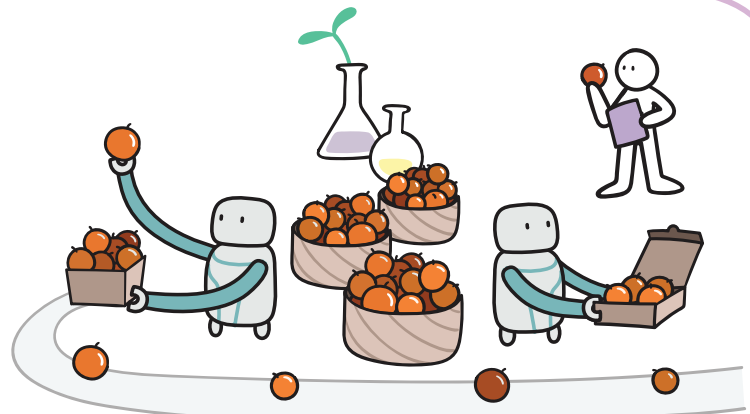


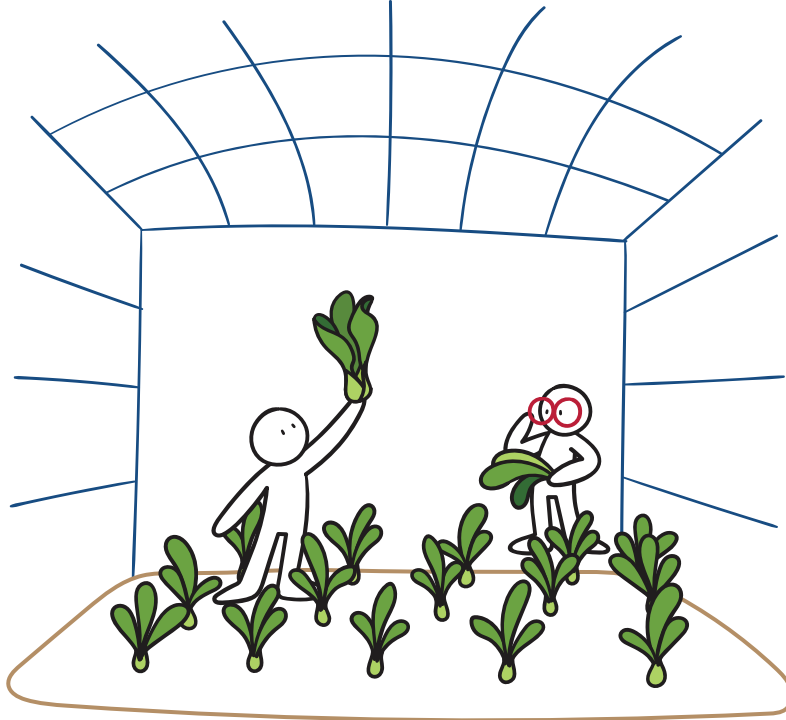
Scenario 2: “The Techno-Food System” (Centralized Efficiency): Soil degradation is largely ignored. Instead, humanity turns to large-scale, industrial, lab-grown food and synthetic biology to feed the population. While efficient, this system is highly centralized, is energy-intensive, and creates unforeseen health and ecological consequences.

Key Drivers: Belief in a purely technological salvation; powerful corporate actors in the biotech space; reactive rather than proactive policy.

Economic Model: A highly centralized, patent-driven food-tech industry. Traditional agriculture becomes a niche, premium market.

Challenge: Unforeseen ecological side effects, loss of biodiversity, and the social and ethical dilemmas of a world disconnected from its natural food systems.



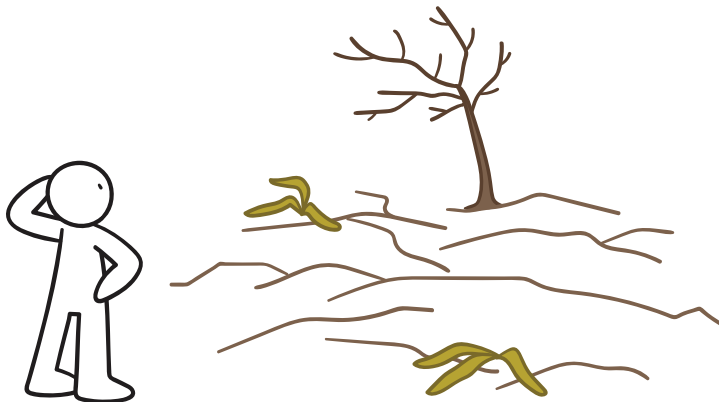


Scenario 3: “Local Havens, Global Famine” (Adaptive): Global food systems collapse due to widespread soil degradation and climate shocks. In response, resilient local communities create self-sufficient, regenerative “food havens.” However, there is widespread famine and conflict in regions that were unable to adapt.

Key Drivers: Geopolitical fragmentation; collapse of global supply chains; strong community leadership and local innovation.

Economic Model: A network of decentralized, self-sufficient, and highly resilient local food economies.

Challenge: Lack of global coordination on larger issues and significant inequality between the resilient “havens” and the collapsed regions.



Scenario 4: “The Great Dust Bowl” (Pessimistic): The “business-as-usual” of degenerative industrial agriculture continues, leading to catastrophic soil erosion, widespread desertification, and a permanent decline in global food production capacity.

Key Drivers: Political inertia; powerful vested interests in the chemical-industrial agriculture complex; failure to act on scientific warnings.

Economic Model: A degenerative, increasingly fragile, and resource-constrained agricultural economy, leading to chronic food shortages and price volatility.

Challenge: Widespread human suffering, mass migrations from uninhabitable regions, and the potential for a large-scale collapse of civilization.

Phase 3: Future-Informed Ideation

With a rich view of the potential futures, we can now move to ideation. A creative mash-up is an excellent tool for synthesizing diverse signals and uncovering entirely new opportunity areas.

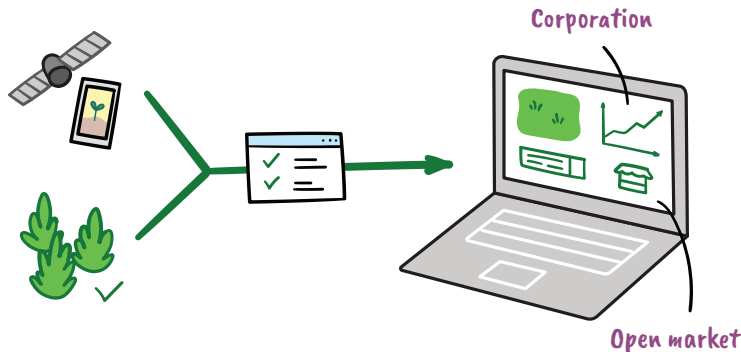
Example Mash-Up for Planetary Balance

Intersection of Signals:

- AI-powered, real-time soil health monitoring
- A new social media platform based on verifiable contributions
- The legal concept of “natural capital” in national accounting

Novel User Need:

A way for farmers to be directly and transparently rewarded for the ecological value they create (like sequestering carbon or increasing biodiversity), not just for the volume of crops they produce.



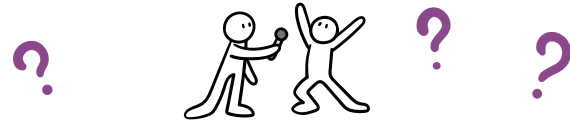
New Product/Experience (The Mash-Up)

The “Carbon Harvest” Platform:

A global digital platform where farmers can use verifiable, real-time data from soil sensors and satellites to issue “regeneration credits.” These credits, representing sequestered carbon and increased biodiversity, can then be sold on an open market to corporations and individuals, creating a direct financial incentive for regenerative practices.

Phases 4 & 5: Future-Fit Prototyping & Strategic Navigation

Before we can build a full strategy, we must assess our readiness to navigate toward our preferable future. The following questions are a powerful tool for testing the readiness of our scenarios and the solutions we have designed for them.



Powerful Questions for Assessing Scenario Readiness:

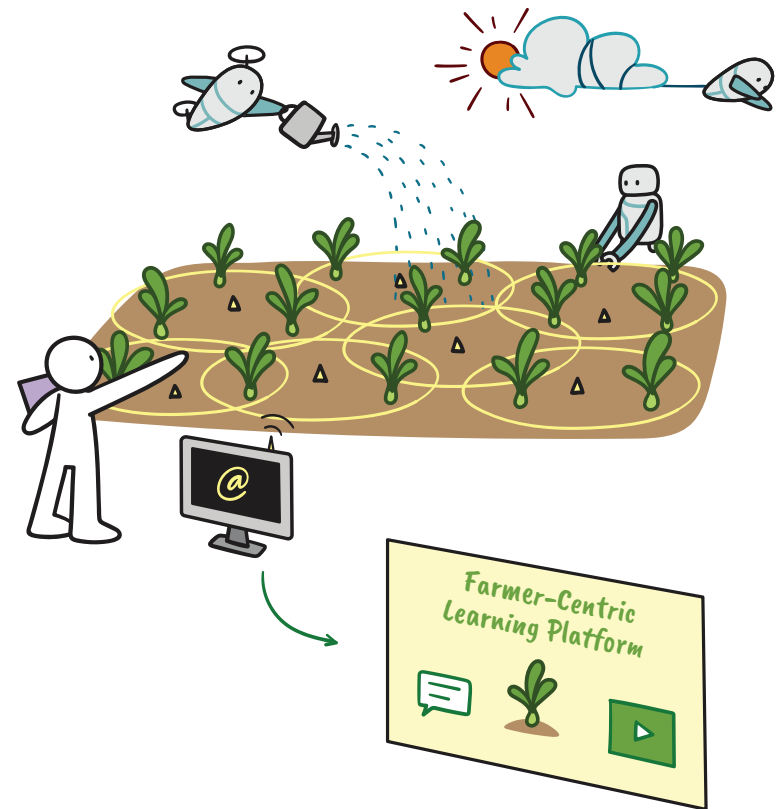
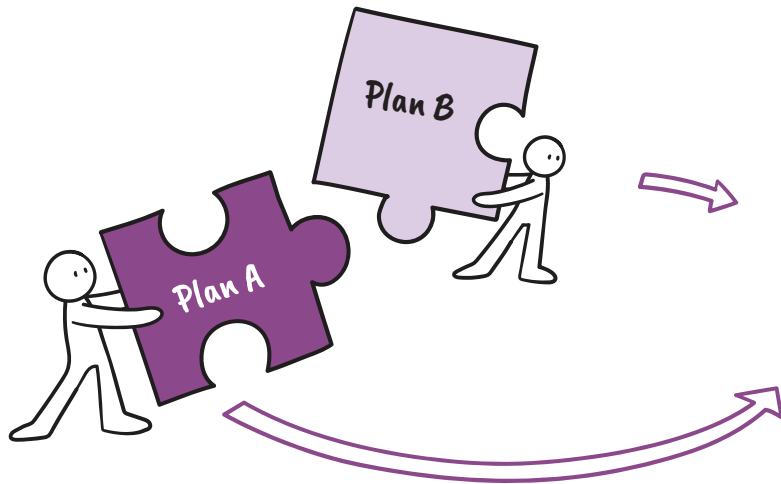
- **Human:** How do we ensure these future scenarios genuinely serve human needs and enhance well-being across all demographics? What new skills or mindsets will humans need to thrive in this future?
- **Planet:** How do these future scenarios impact the environment? How can we ensure that our future choices contribute to ecological regeneration, rather than depletion?
- **Knowledge:** What critical information is missing to navigate this future effectively? How will we generate, share, and utilize new knowledge to adapt and innovate?
- **Tools:** What technologies and infrastructures are required to realize this future? Are the existing tools adequate, or do we need to invent or adapt new ones?
- **Rules:** What policies, regulations, and ethical frameworks need to be established to support this future and ensure fairness and accountability?
- **Networks:** What new collaborations and partnerships need to be forged to build and sustain this future? How will we foster trust and effective communication across diverse stakeholders?

From Scenarios to Strategy

Finally, we use the four scenarios to build a robust and adaptive strategy for the “Carbon Harvest” platform.

- **“No-Regret Moves”:** What strategic actions are a good idea in all four scenarios?
- **Investment in low-cost, verifiable soil sensors:** This is valuable whether the future is regenerative or techno-utopian.
- **Building a powerful, farmer-centric educational platform:** Empowering farmers with knowledge is a resilient strategy in any future.

By investing in low-cost, verifiable soil sensors and a powerful, farmer-centric educational platform from the outset, the “Carbon Harvest” platform is positioned to thrive in a world of either “Regenerative Abundance” or a more fragmented future.



“Contingent Strategies”:

- **If** we see early signals that the “Regenerative Abundance” scenario is emerging (e.g., major governments begin to subsidize soil carbon), **then** we will rapidly scale our market-making function.
- **If** we see early signals that the “Techno-Food System” is emerging (e.g., massive investment in lab-grown food), **then** we will pivot to position our platform as a premium “natural food” verification system for a niche, high-value market.

The Strategic Power of Futures Thinking

The goal of futures thinking is not to generate a single “correct” prediction of what will happen. It is a rigorous process designed to expand our awareness of what could happen. By exploring a diverse range of possible futures, we build the resilience to navigate uncertainty and the agency to shape the outcomes we desire. Traditional strategy often fails because it treats the future as a linear extension of the past. In contrast, strategy built on futures thinking uses the future as a laboratory to test assumptions and prototype resilience.

Traditional Strategy vs. Futures Thinking

FEATURE	TRADITIONAL STRATEGY	FUTURES THINKING IN STRATEGY
Perspective	Focuses on optimizing the status quo	Focuses on systemic transformation
Method	Relies on historical data and linear trends	Scans for weak signals and disruptive shifts
Horizon	Solves for immediate competitive advantage	Solves for long-term planetary health
Response	Reactive adjustment to market forces	Proactive design of a preferable future

“The value of Futures Thinking isn’t getting the forecast right. It is about realizing that the future is something we invent.”
—Jeanne Liedtka

Three Pillars of Future-Forward Strategy

1. Developing Strategic Agency

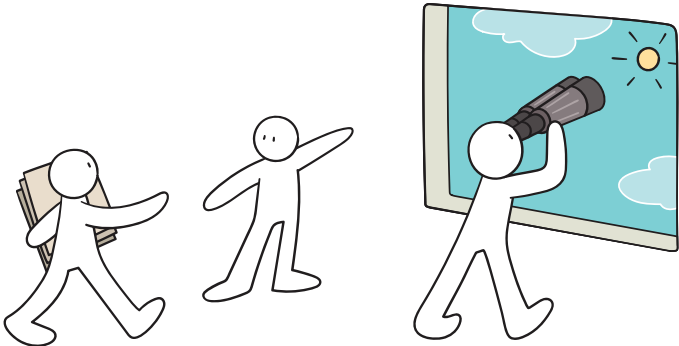
We must stop viewing the future as a destination that happens to us. Futures thinking provides the tools to move from passive observation to active participation. When we articulate a “preferable future,” we create a North Star that guides every decision we make today.

2. Prototyping Systems, Not Just Products

Every strategy is a hypothesis. By using futures thinking, we can prototype these hypotheses against different scenarios to uncover unintended consequences. This allows us to stress-test governance, policy, and business models—ensuring they align with regenerative principles before they are deployed into the real world.

3. Activating the Living Soil Mandate

The process concludes by translating high-level futures thinking into a **real strategic pathway**. This is the foundation of the **Living Soil Mandate Strategy**. It ensures that our long-term vision for planetary health is embedded into the core “soil” of the organization. We bridge the gap between current operations and the systemic resilience required for humanity and the planet to thrive.



Futures Thinking Tools

Extend your gaze beyond the present to design for a thriving future within the Design Thinking for Humanity framework. Actively engage with potential tomorrows. Design thinking tools inspire tangible outcomes like products, services, and new business models. They help navigate ambiguity with optimistic confidence. Futures thinking offers a vital, complementary perspective.

Aim for inspiration on a grander scale. Think expansively about opportunities that may materialize in the coming years. Explore potential futures to inform strategy for tomorrow and make it robust against inherent uncertainty. Embrace the ambiguity of envisioning what lies ahead. Foster pragmatic humility as you navigate the realm of possibilities.

Integrate these powerful tools seamlessly into design thinking initiatives. Enrich understanding and expand creative horizons to create regenerative solutions. Move beyond reacting to current challenges. Proactively shape a desirable future for both people and the planet. Use the selection of futures thinking tools outlined on the following pages.



Futures Thinking Toolbox



Tool

Page Number

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Horizon Scanning:

This systematic process involves actively looking for early signals of change, emerging trends, and potential disruptions across various domains (PESTLE). It helps us to identify weak signals that might grow into significant forces shaping the future.

Stakeholder Analysis & Mapping:

Identifying and understanding the perspectives, power, and interests of different stakeholders is vital in futures thinking. This helps to uncover diverse viewpoints, potential conflicts, and opportunities related to emerging trends and future scenarios. Tools like power-interest grids and stakeholder journey maps can be valuable here.

PESTLE Analysis

This tool provides a framework to scan the macro-environment using six domains: political, economic, social, technological, legal, and environmental. It helps teams identify large-scale drivers of change and understand the broader context in which they operate, moving their perspective beyond immediate internal challenges.

Unconscious Bias Model/Analysis:

Recognizing and understanding cognitive biases (like confirmation bias, anchoring bias, etc.) that can skew our perception of the present and future is crucial. Tools like the Unconscious Bias Model help to identify and mitigate these biases in futures thinking activities, leading to more objective observations.

Ladder of Inference:

This tool helps to surface assumptions and interpretations made when observing data and forming conclusions. By understanding where we jump to conclusions, we can revisit our observations and ensure our understanding of the present (and thus potential futures) is based on more solid ground.

Causal Layered Analysis (CLA):

CLA encourages a deeper exploration of issues beyond surface-level trends. It involves four layers: the litany (superficial news), systemic causes, social discourse/worldview, and myth/metaphor. Unpacking these layers reveals deeper cultural and historical underpinnings that influence how we perceive and shape the future.

Scenario Planning & the 2x2 Matrix:

A classic foresight technique that uses the most critical uncertainties (identified through a 2x2 impact/uncertainty matrix) to build a set of distinct, plausible stories about the future.

Probability/Impact Matrix:

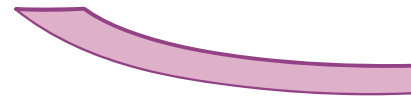
This tool helps prioritize identified trends or potential future events based on an assessment of their likelihood of occurrence and the magnitude of their potential impact. By visually mapping these elements, it allows us to focus attention and resources on the most critical uncertainties.

Pattern Recognition:

This involves actively looking for recurring themes, connections, and relationships among the diverse signals and trends identified during environmental scanning. It is about making sense of seemingly disparate pieces of information to uncover deeper underlying patterns that might indicate significant future shifts.

Sensemaking:

This is the process of interpreting ambiguous or complex information to develop a coherent understanding of its implications for the future. It involves framing, contextualizing, and narrating the identified patterns and trends to create meaning and inform subsequent futures thinking activities like scenario building.





Futures Wheel

This tool is a structured brainstorming method used to explore the cascading, ripple-effect consequences of a future trend or event. By mapping out the direct (first order), indirect (second order), and subsequent (third order) impacts, teams can uncover hidden opportunities, risks, and unexpected areas for innovation that are not immediately obvious.

Creative Mash-Up

This tool sparks innovation by forcing the combination of two or more unrelated concepts. In a futures context, it involves taking a core human need from the present and “mashing it up” with a speculative future technology or trend. This structured collision of ideas helps teams break free from conventional thinking and generate unique, future-ready solutions.

Future Headlines

This tool uses storytelling to drive ideation by challenging a team to write a compelling news headline from a desired future. By first defining a successful future outcome as a tangible headline, the team can then work backward to brainstorm the specific products, services, or social shifts that would need to exist for that headline to become a reality.

Object from the Future

This tool makes a future scenario tangible by challenging a team to design and prototype a physical or digital artifact from that specific future. Whether it is a food packaging label from a world without plastic or a user interface for a service that does not yet exist, creating an “object from the future” is a powerful way to generate and test ideas in a hands-on, experiential way.



Experiential Futures

This tool moves beyond just describing a future to creating an immersive experience that allows people to “feel” it. By creating tangible “artifacts from the future” or staging interactive scenarios that simulate a future environment, it allows stakeholders to test and react to a future concept in a deeply human and insightful way.

Wind Tunneling

This tool is a powerful method to test the resilience of a current strategy, product, or idea. The concept involves metaphorically placing your idea in the “wind tunnel” of each of the future scenarios you have built to see how it performs—assessing whether it thrives, adapts, or breaks under different future conditions.

Future Role-Playing

This tool explores the human and social dynamics of a potential future by having participants act out a specific situation within that scenario. By assigning personas and a context, it is an incredibly effective way to uncover the unforeseen social norms, conflicts, and human experiences that a new technology or system might create.



Backcasting

This tool reverses the traditional planning process. Instead of forecasting forward from the present, it starts with a clear vision of a desirable future and then works backward in time to identify the necessary policies, milestones, and actions that must be taken to connect that future to the present.

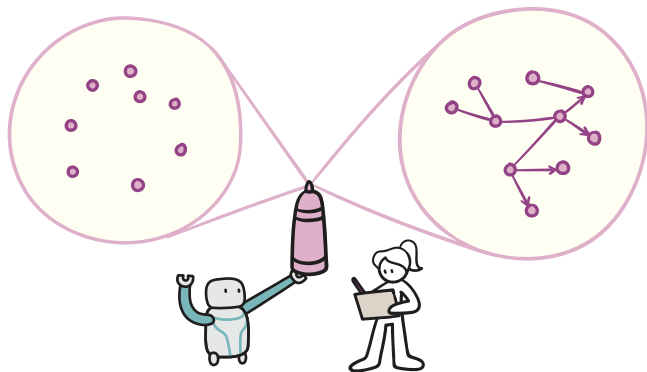
Future-Ready Roadmapping

This tool is used to create a dynamic and adaptive strategic roadmap. Unlike a rigid, linear plan, it identifies multiple potential pathways, key decision points, and “signpost indicators” to monitor. This allows a strategy to evolve and be adjusted as the future unfolds and new information becomes available.

Horizon Scanning

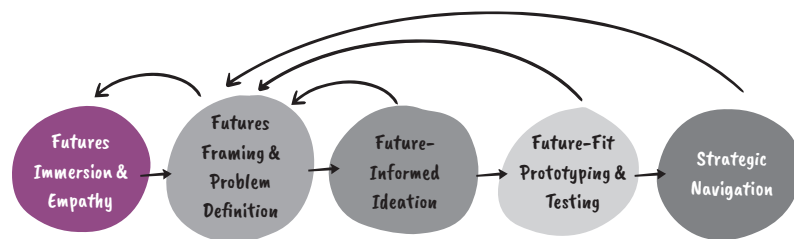
I would like to...

...systematically search for early signals of change and potential disruptions on the horizon before they become mainstream.



What you can do with the tool:

- Identify emerging trends and weak signals that could grow to have a significant future impact.
- Move beyond reacting to current events by proactively anticipating future developments.
- Broaden the team's perspective and challenge assumptions about what is possible or impossible.
- Gather the raw material (signals, trends, drivers of change) that will serve as the direct input for tools like **Pattern Recognition (see page 96)** and the **Probability/Impact Matrix (see page 94)**.
- Build a more dynamic and forward-looking awareness of the external environment.



Expert Tips

Look to the Fringes

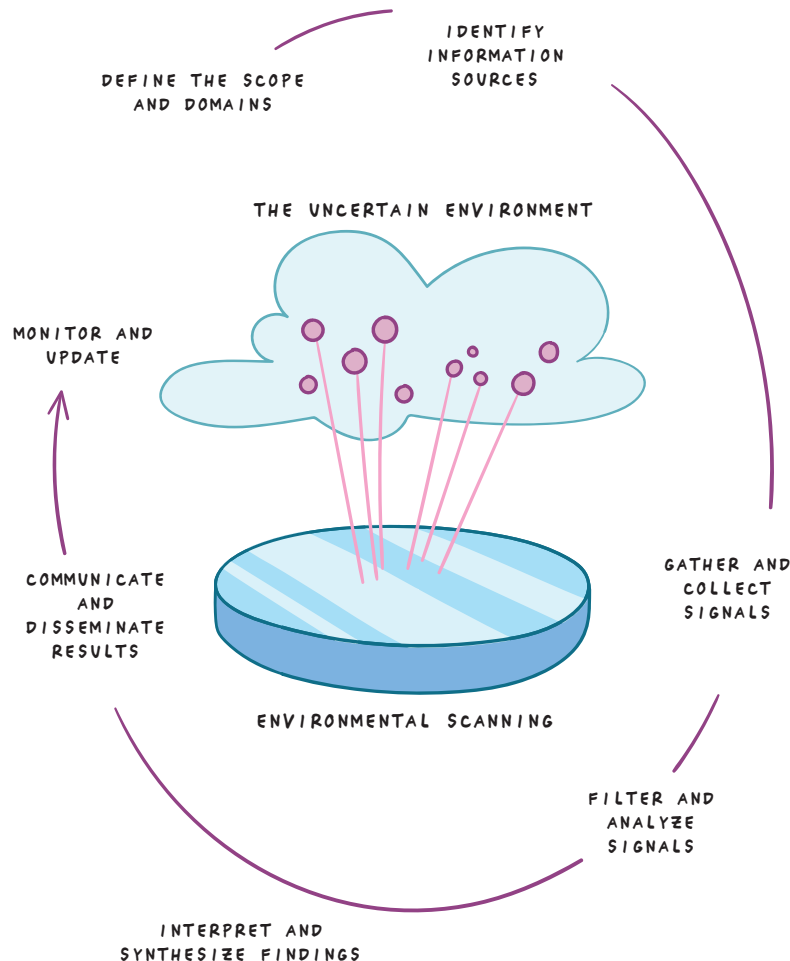
Meaningful change rarely starts in the mainstream. To find truly novel signals, look to the “fringes,” including the artists, the activists, the niche subcultures, the radical scientists, and the early-stage startups. These spaces often reveal the future first.

Curate, Do Not Just Collect

The goal is not to create an exhaustive library of everything that is happening. The real skill is in curation, which is the first step toward sensemaking. A small collection of powerful, relevant signals is far more valuable for identifying patterns than a large, noisy archive.

Make It a Continuous Practice

Habit Horizon Scanning is most effective when it is a continuous, ongoing practice, not a one-time project. Encourage a “scanning mindset,” constantly looking for signals of change and bringing them back to the team. This builds a dynamic and resilient organizational awareness.



=> See **Exponential Trends Scanning** (see page 286) as a specialized variation of this tool.

How this tool is applied:

Horizon Scanning is a structured process for looking beyond the immediate and familiar to identify potential future developments. It involves actively searching for signals of change across a broad landscape, often using the **PESTLE Analysis framework** (see page 84) to ensure a comprehensive scan.

Step 1: Define the Scope and Domains

First, define the scope of your scan. What is the central topic or question you are investigating? Then, identify the key domains to scan for signals. A common framework is PESTLE (Political, Economic, Sociological, Technological, Legal and Environmental), or sometimes applied as STEEP (Social, Technological, Economical, Environmental, and Political).

Step 2: Gather Signals

Systematically gather information from a wide variety of sources. Look for “weak signals,” the small, early indicators of a potentially significant change not yet widely recognized. Include sources such as academic journals, patent filings, niche blogs, art projects, social media trends, and expert interviews. Collect a diverse portfolio of signals.

Step 3: Document and Assess

Document each signal clearly, noting its source and potential implications. A simple method is to use a “signal card” for each piece of information.

As a team, you can then begin an initial assessment:

- Is this signal novel?
- Does it have the potential to grow?

This step turns raw data into a curated library of potential future drivers.



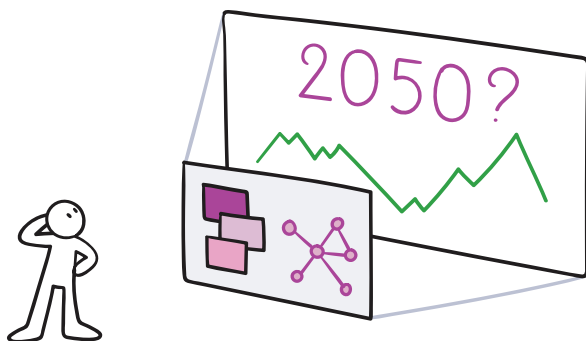
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Stakeholder Analysis & Mapping

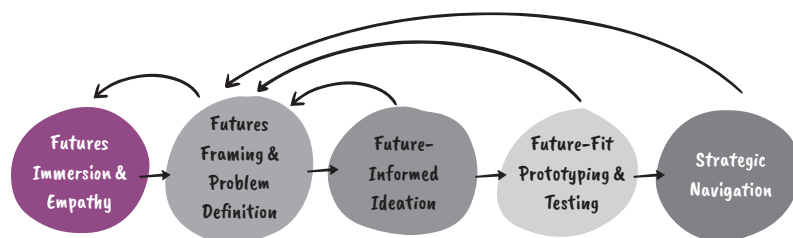
I would like to...

...identify all the actors and forces involved in our challenge and visualize their relationships and influence.



What you can do with the tool:

- Determine which stakeholders have the most power to shape future trends and outcomes related to the area of focus.
- Identify key players, including those who may be overlooked, such as non-human stakeholders (e.g., a river, a forest) or future generations.
- Understand the complex network of relationships, power dynamics, and interdependencies.
- Anticipate potential conflicts, uncover opportunities for collaboration, and identify leverage points for systemic change.
- Provide a solid foundation for building human- and life-centered solutions that consider the entire system.



Expert Tips

Give a Voice to the Voiceless

When mapping challenges related to humanity and the planet, make a deliberate effort to represent stakeholders who cannot speak for themselves. Create a persona or a set of needs for "The Ocean" or "A Future Child." This ensures that their interests are considered in the solutions you develop.

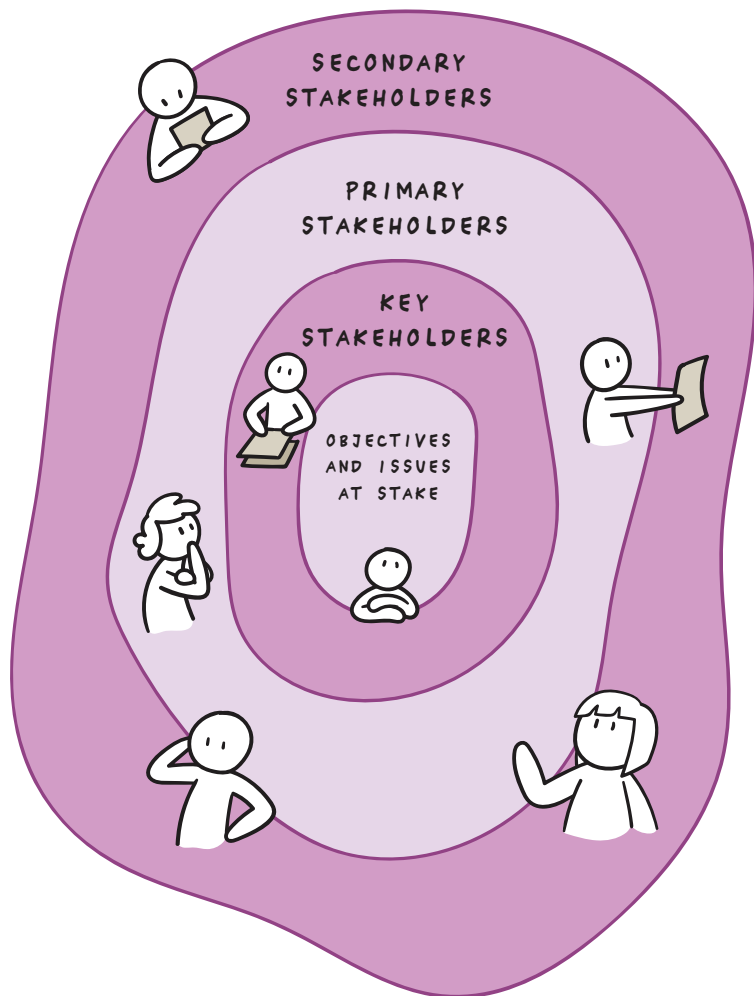
Map Flows, Not Just Connections

Elevate the map by visualizing the flows between stakeholders. Use arrows to show the direction of money, data, resources, and influence. This often reveals the underlying power dynamics and systemic incentives that are not immediately obvious and serves as a direct input for the Multi-stakeholder Value Network Mapping tool (see page 250).

Use It as a Living Document

A systems map is not a one-time exercise. It is a living document that should be updated as you learn more throughout the future thinking process. Revisit the map after building scenarios or prototypes to see how the relationships and power dynamics might shift in different futures.

How this tool is applied:



=> See **Systemic Empathy Map** (see page 148), as stakeholder mapping is the direct prerequisite for it.

A Stakeholder & Systems Map is a visual representation of all the actors and elements connected to a particular challenge. It moves beyond a simple list to show the dynamic relationships between them.

Step 1: Brainstorm all Stakeholders

Starting, for example, with the output of a **Wicked Problem Framing** (see page 152) session, the team brainstorms all possible stakeholders. Think broadly. Include users, customers, internal teams, partners, regulators, and the community. Crucially, for a “for Humanity” approach, also include non-human or abstract stakeholders like “the planet,” “local ecosystems,” “future generations,” or “public trust.”

Step 2: Position and Map Relationships

Place your central challenge in the middle of a large canvas. Begin to position the identified stakeholders around it. You can group them by proximity or category (e.g., internal, external, public). Use lines and connectors to visualize the relationships between them. Use different line styles to represent different types of connections (e.g., solid for direct influence, dotted for indirect, lightning bolt for conflict).

Step 3: Analyze the System

With the map visualized, analyze the system as a team.

Ask key questions:

- Who holds the most influence?
- Where are the strongest alliances?
- Where are the points of tension or conflict?
- Are there any stakeholders who are isolated?
- What are the flows between them (e.g., money, data, resources)?

This analysis transforms the map from a simple diagram into a powerful strategic tool.



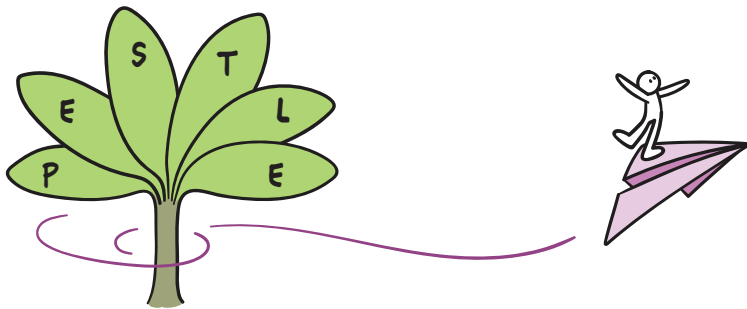
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PESTLE Analysis

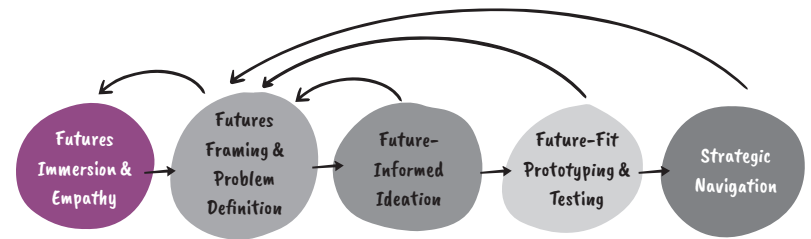
I would like to...

...conduct a broad scan of the macro-environmental forces that could shape our future.



What you can do with the tool:

- Provide a structured framework for a comprehensive environmental or horizon scan.
- Ensure a balanced analysis by prompting the team to look beyond their immediate area of expertise.
- Identify large-scale drivers of change that could create future opportunities or threats.
- Understand the external context in which your organization or challenge operates.
- Gather a rich set of signals and trends to use as direct input for tools like **Pattern Recognition** (see page 96) and the **Probability/Impact Matrix** (see page 94).



Expert Tips

Look for Interconnections

The real power of a PESTLE analysis comes not from the individual lists but from understanding the interconnections between the domains. Ask your team: how might a technological shift (e.g., AGI) create a new political challenge (e.g., job displacement policy)? These intersections are where complex future scenarios emerge.

Think Globally and Locally

When brainstorming drivers, remember to think at multiple scales. A driver can be a global geopolitical shift, a national policy change, or a local community value. Capturing this diversity will create a much richer and more realistic picture of the external environment.

Use It as a Living Framework

Treat PESTLE as a dynamic framework rather than a static, one-time exercise. Revisit it periodically to update your understanding of the macro-environment. A quick PESTLE review every six months can help your team stay attuned to the evolving landscape and avoid strategic blind spots.

How this tool is applied:



P	POLITICAL
E	ECONOMIC
S	SOCIAL
T	TECHNOLOGICAL
L	LEGAL
E	ENVIRONMENTAL

PESTLE is an acronym that stands for Political, Economic, Social, Technological, Legal, and Environmental. It serves as a mnemonic to guide a comprehensive scan of the external macro environment.

Step 1: Define the Focal Question

Start with a clear question or topic at the center of your analysis. This could be a broad area like “The Future of Global Supply Chains” or a specific challenge like “Building Resilient Urban Water Systems.”

Step 2: Brainstorm Drivers for Each Domain

Working as a team, brainstorm the key trends, signals, and potential future events for each of the six PESTLE domains:

Political: What is happening with government policies, geopolitical shifts, political stability, or trade regulations?

Economic: What are the key trends in economic growth, inflation, employment, or market dynamics?

Social: What are the shifts in demographics, cultural values, lifestyles, and consumer behavior?

Technological: What are the emerging technologies, new materials, or scientific breakthroughs on the horizon?

Legal: What changes in legislation, regulations, or legal frameworks could have an impact?

Environmental: What are the critical issues related to climate, ecosystems, resource availability, and sustainability?

Step 3: Analyze and Prioritize

Once the canvas is populated, discuss the most significant drivers that have been identified. The team can then use a tool like the **Probability/Impact Matrix (see page 94)** to prioritize these drivers and determine which ones warrant a deeper analysis.

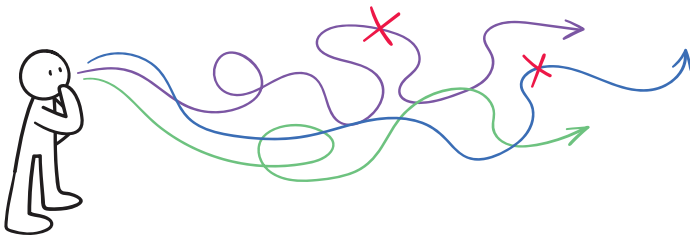


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Unconscious Bias Model/Analysis:

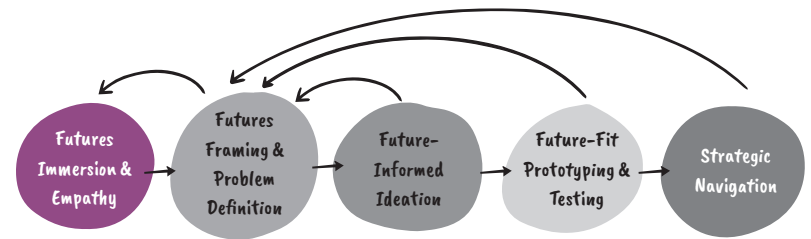
I would like to...

...identify and acknowledge the hidden mental shortcuts and stereotypes that automatically influence my perception and decisions.



What you can do with the tool:

- Become aware of the cognitive biases that shape your interpretation of people, signals, and data.
- Foster a more inclusive and objective team environment by recognizing and mitigating stereotypes.
- Make more deliberate and fair decisions by understanding the subconscious filters you apply.
- Improve the quality of your empathy work by recognizing how your own biases can color your understanding of others.
- Lay the groundwork for more rigorous analysis by first addressing the “noise” in your own thinking.



Expert Tips

Create a Bias Checklist

Before starting a major analysis or ideation session, have the team quickly review a short checklist of the most common biases (Confirmation, Anchoring, Availability, etc.). This simple act primes everyone’s awareness and makes it more likely that biases will be caught in the moment.

Diversify Your Inputs

The best way to fight bias is to diversify your sources of information. If all your signals come from the same industry reports or news outlets, your perspective will be inherently biased. Make it a rule to intentionally scan sources from different cultures, disciplines, and unconventional “fringes” of society.

Appoint a Devil’s Advocate

For important decisions, formally assign one team member the role of “devil’s advocate.” Their job is to constructively argue against the group consensus, expose potential biases, and stress-test the team’s reasoning. This makes challenging assumptions a formal part of the process, not an act of criticism.

- **Confirmation Bias**

The tendency to favor information confirming existing beliefs can lead futures thinking practitioners to overlook signals that contradict their preferred future scenarios.

- **Availability Bias**

Relying on easily recalled information might cause futures thinking to overemphasize recent or dramatic events, neglecting less obvious but potentially more impactful trends.

- **Anchoring Bias**

Over-relying on initial pieces of information can skew future projections, even if that initial data is not the most relevant or accurate.

- **Optimism Bias**

The tendency to overestimate positive outcomes and underestimate negative ones can lead to overly rosy future scenarios and a lack of preparedness for challenges.

- **Hindsight Bias**

Believing past events were predictable can create a false sense of understanding future inevitabilities, hindering the exploration of truly novel possibilities.

- **Groupthink**

The desire for harmony within a futures thinking team can suppress dissenting opinions and limit the consideration of diverse and challenging future perspectives.

- **Affinity Bias**

The tendency to favor people or ideas that are similar to our own can lead to a narrow exploration of future possibilities, overlooking diverse perspectives and potentially disruptive trends.

- **Confirmation Bias**

In futures thinking, this can manifest as seeking out and valuing only those signals and data points that reinforce pre-existing assumptions about the future, while dismissing contradictory information.

How this tool is applied:

Unconscious bias refers to the automatic mental associations we make often based on stereotypes without our conscious awareness. The goal of this analysis is not to eliminate bias entirely because that is an impossible task. Instead, the objective is to become aware of these associations and mitigate their influence on our futures thinking work.

Step 1: Identify Common Biases

The first step is to build a shared vocabulary by familiarizing the team with common cognitive biases that affect foresight. These include confirmation bias, the tendency to favor information confirming existing beliefs; availability bias, relying on easily recalled information; and anchoring bias, over-relying on the first piece of information offered..

Step 2: Question First Impressions

When encountering a new idea, signal, or piece of data, consciously pause and question the team's gut reaction. Ask: "What is our immediate interpretation here? What past experiences or assumptions might be driving that initial reaction?" This deliberate pause interrupts the automatic thinking process.

Step 3: Actively Seek Alternative Perspectives

Mitigate bias effectively by deliberately engaging with different viewpoints. Actively seek out data that contradicts an initial hypothesis. Involve people from diverse backgrounds, roles, and cultures in the conversation to challenge the team's dominant perspective and uncover blind spots. A powerful way to structure this critical reflection is to apply the **Ladder of Inference** (see page 88) to deconstruct how the team is forming its conclusions.

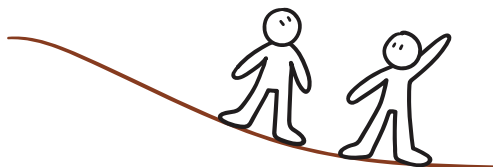


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Ladder of Inference

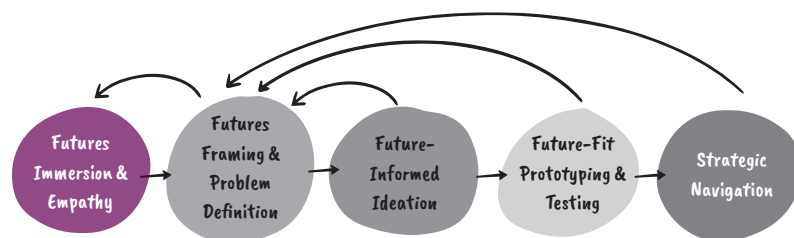
I would like to...

...deconstruct my thinking process, making my path from observation to conclusion transparent and open to challenge.



What you can do with the tool:

- Visualize the often-invisible mental steps that lead from data to action.
- Pinpoint the exact moments where assumptions and biases enter your reasoning process.
- Resolve team disagreements by tracing conclusions back to the specific data and interpretations they are based on.
- Improve strategic conversations by focusing them on evidence rather than on competing, unsubstantiated beliefs.
- Foster a culture of clear thinking and evidence-based reasoning within your team.



Expert Tips

Practice Walking Back Down

The most powerful use of this tool is to deconstruct an existing belief. When a strong conclusion is reached, start at the top of the ladder and walk back down. Ask: "What belief led to this action? What assumption was made? What data was focused on, and what was ignored?" This practice builds critical self-awareness.

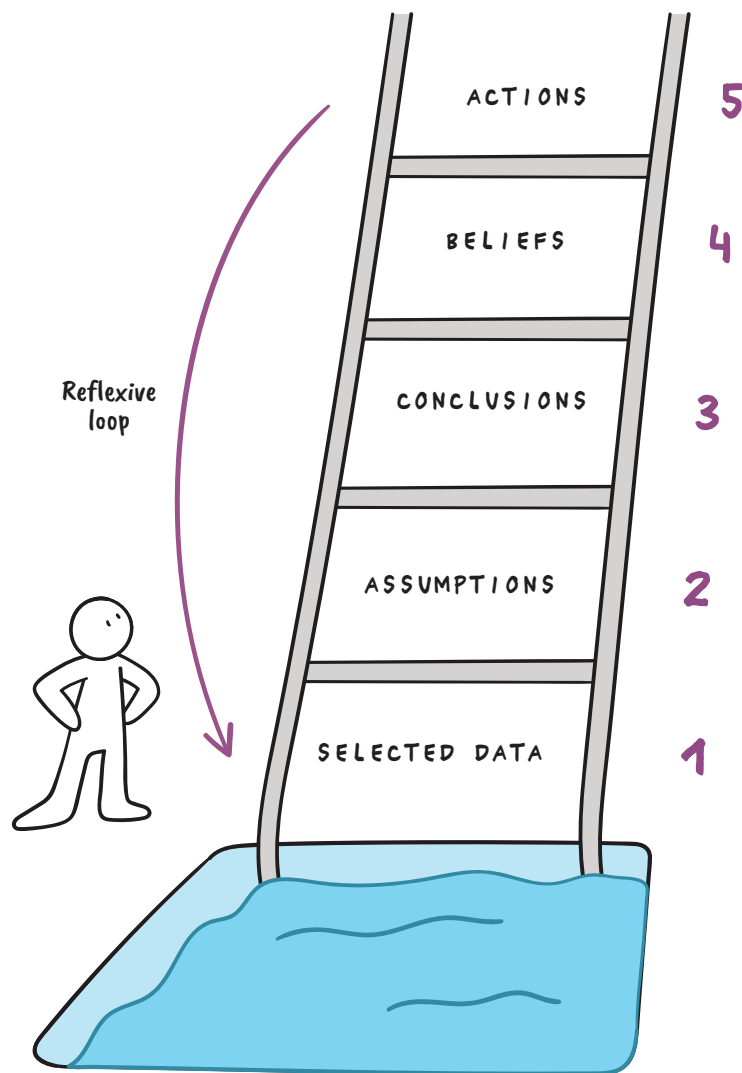
Share Your Ladder with the Team

This tool is essential for Radical Collaboration (see page 126). In discussions, practice saying, "The data I am focusing on is X, and I am interpreting it to mean Y, which leads me to believe Z." This creates immense clarity and allows the team to build upon each other's reasoning, not just their conclusions.

Use It as a Listening Tool

When a team member presents an argument, try to map their reasoning onto the ladder. This helps to listen more deeply and to ask more precise, clarifying questions, such as, "It sounds like an assumption is being made that X is true. Can that be explored further?"

How this tool is applied:



The Ladder of Inference is a model that illustrates how we move from a piece of data to a final action. By consciously walking up the rungs, we can reveal the leaps of logic and hidden assumptions that shape our decisions.

Step 1: Observe Reality and Select Data

At the bottom of the ladder is the vast pool of observable reality. From this, a small subset of data is selected for attention, often based on inherent biases and past experiences.

Step 2: Add Meaning and Make Assumptions

Movement up the ladder occurs by interpreting the selected data and assigning it a personal or cultural meaning. Based on that meaning, assumptions are then made to fill in any gaps.

Step 3: Draw Conclusions and Take Action

Finally, conclusions are drawn from these assumptions, which solidify into beliefs. These beliefs drive the resulting actions. This process creates a "reflexive loop," where beliefs at the top of the ladder influence which data is selected next time at the bottom.

Step 4: Descend the Ladder for Better Futures Thinking

To improve futures thinking, the ladder must be consciously descended by questioning conclusions about the future. The following questions can be addressed by a team:

- What future conclusions have been reached?
- How were the initial signals interpreted?
- Which signals were the primary focus?
- What underlying assumptions are being made about the future?
- What crucial signals might be missing?

This reflective process helps identify **biases** (see page 86) and builds more robust and nuanced perspectives on potential futures.

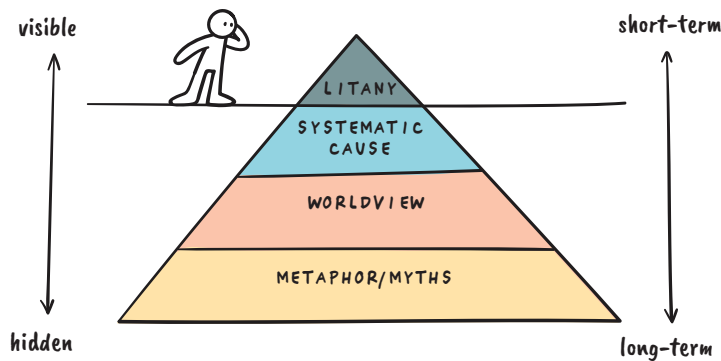


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Causal Layered Analysis (CLA)

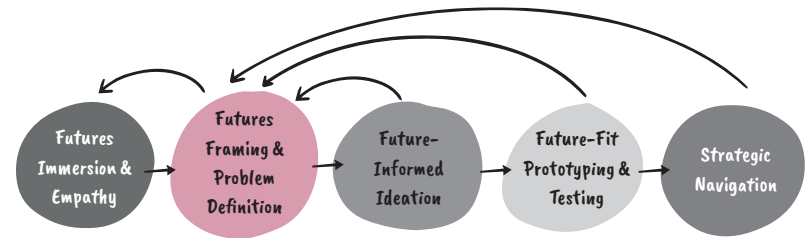
I would like to...

...move beyond surface-level problems and understand the deeper systemic, cultural, and mythic drivers that shape our future.



What you can do with the tool:

- Go beyond treating symptoms to identify the root causes of complex challenges.
- Expose the underlying worldviews, assumptions, and myths that limit conventional thinking and hinder transformative change.
- Develop richer, more profound future scenarios that challenge the status quo rather than just extending current trends.
- Identify deeper leverage points where interventions can have a more lasting and meaningful impact for humanity and the planet.
- Facilitate a more holistic understanding of a problem, leading to more innovative and systemic solutions.



Expert Tips

Go Beyond the Obvious

The real power of CLA is in digging below the surface. Do not stop at the systemic causes that are easy to identify. Push the team to question the underlying Worldview and the foundational myths that hold those systems in place.

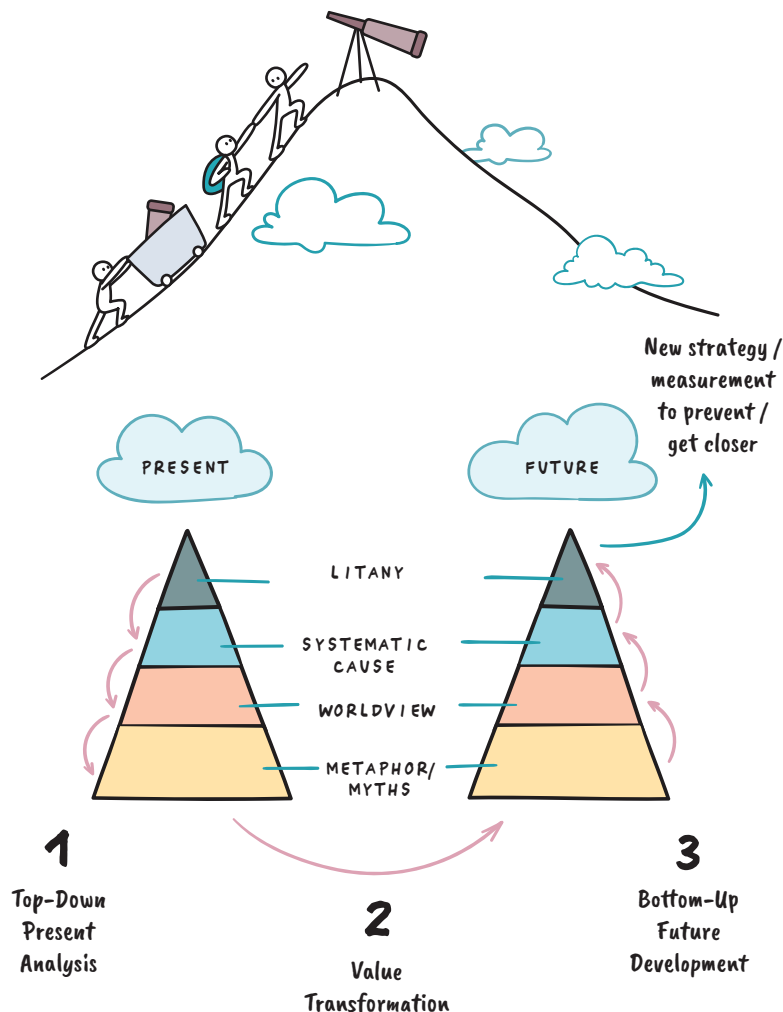
Challenge the Core Myth

For challenges related to humanity and the planet, actively identify and challenge the core myth of human separation from nature. Question the worldview that prioritizes endless growth over ecological well-being.

Build a New Narrative

Use CLA not just as an analysis tool but also as a creative one. Once the old story has been deconstructed, use that insight to build a new and more resilient narrative, such as "humanity as a steward within a living system," and design the preferable future envisioned.

How this tool is applied:



This new litany can then serve as the direct inspiration for a **Future Headline** (see page 104).

The power of Causal Layered Analysis lies in its dynamic, three-step process. It guides us to deconstruct the present down to its core, transform the foundational narrative, and then reconstruct a new, preferable future from the bottom up.

Step 1: Deconstruct the Present

The first step is to analyze the current issue by moving down through the four layers of the "Present" pyramid. This process of deconstruction helps to reveal the hidden drivers behind the obvious problems. The layers are:

- **Litany:** The surface level of the issue, for example the daily headlines, data, and events we see and hear
- **Systemic Cause:** The social, economic, and political structures that create the litany
- **Worldview:** The cultural and ideological assumptions that justify the systems
- **Metaphor/Myths:** The deep, unconscious stories that shape our collective worldview

Step 2: Transform the Core Narrative

This step involves a "value transformation" where we challenge the limiting myth or metaphor at the base of the "Present" pyramid and replace it with a new, empowering one for the "Future." For example, a metaphor of "the economy as a machine" might be transformed into "the economy as a garden" to prioritize regeneration over pure output.

Step 3: Reconstruct a Preferable Future

With a new foundational myth in place, we begin the creative process of "Bottom-Up Future Development." We build upwards through the "Future" pyramid:

- The new **Myth** inspires a new **Worldview**.
- This new worldview allows for the design of new **Systems**.
- These new systems ultimately produce a new, more desirable **Litany** of outcomes.

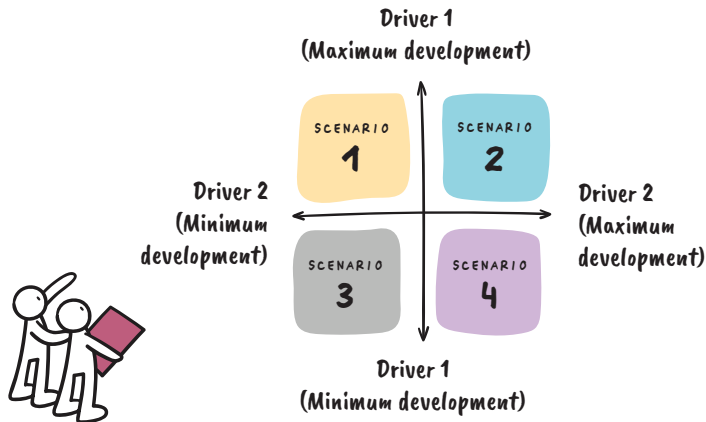


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Scenario Planning & the 2x2 Matrix

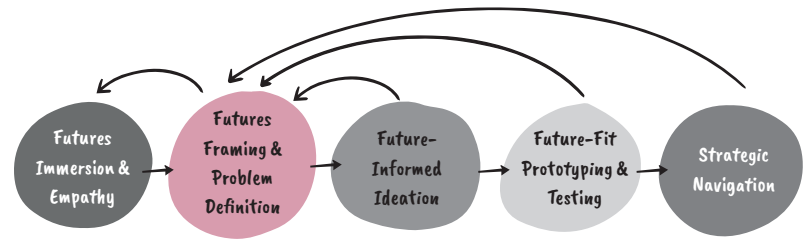
I would like to...

...navigate an uncertain future by creating a set of distinct, plausible stories that prepare our organization for a range of possibilities.



What you can do with the tool:

- Identify the most critical uncertainties that will shape the future landscape.
- Challenge “official future” thinking and expose organizational blind spots by forcing the exploration of different pathways.
- Develop more robust and resilient strategies that can be stress-tested using **Wind Tunneling** (see page 110).
- Communicate complex future possibilities to stakeholders in a compelling, narrative format.
- Build a shared language and facilitate strategic conversations about how to prepare for long-term change.



Expert Tips

Make Your Scenarios Human

Do not let the scenarios remain abstract lists of trends. Populate each future world with “Future Personas” (see page 144). How would a specific person, such as a farmer, a city-dweller, or a community leader, experience life in this scenario? This grounds the foresight work in human reality.

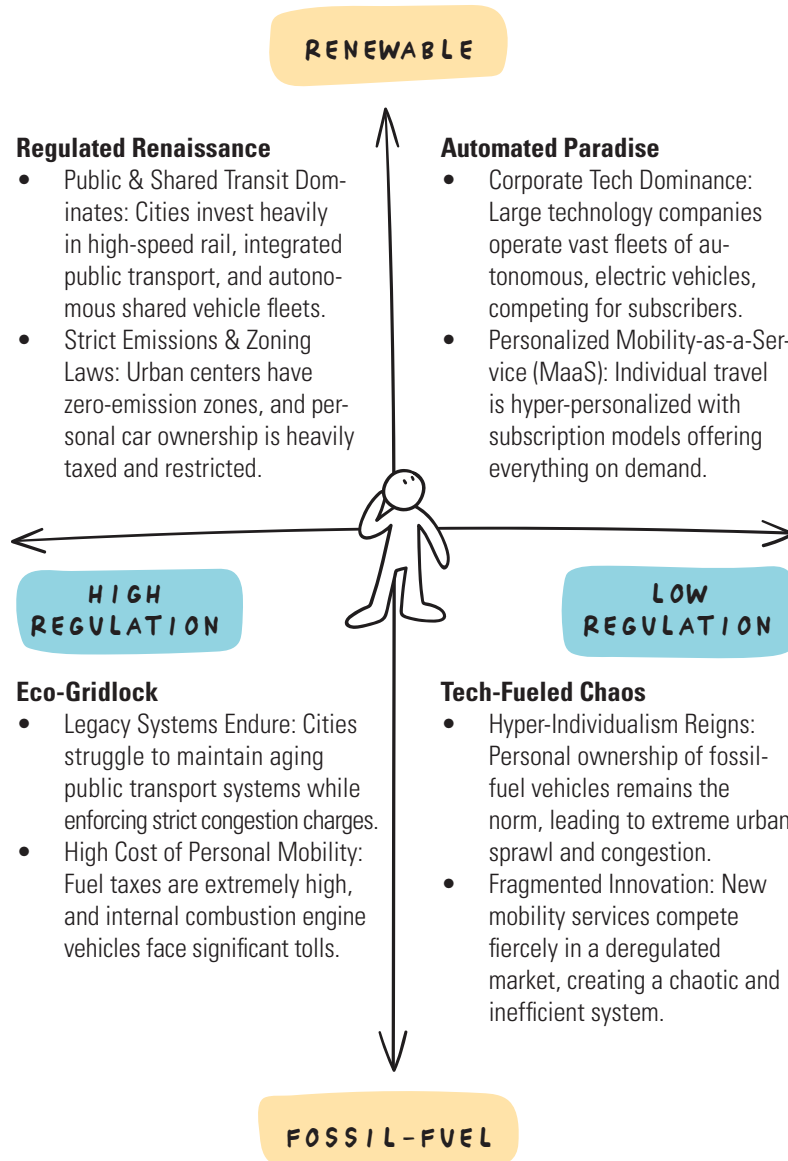
Test for Resilience, Not for Accuracy

Do not aim to predict which scenario is “correct.” Find real value by testing current strategies against all four of them. A truly resilient solution is viable, or at least adaptable, across multiple possible futures.

Explore the Unthinkable Quadrant

The most insightful strategic conversations often emerge from the most counter-intuitive or “unthinkable” scenario. Do not dismiss this quadrant. Pushing a team to prepare for this unexpected future is a powerful way to identify hidden assumptions and build true anti-fragility (see exponentializing, pages 40–41).

THE FUTURE OF MOBILITY?



How this tool is applied:

Scenario Planning is a classic foresight technique that uses a structured process to transform high-level uncertainty into a set of powerful and practical narratives for strategic exploration.

Step 1: Identify and Prioritize Drivers of Change

Begin by brainstorming the key forces and trends identified during **Horizon Scanning** (see page 80) and **PESTLE Analysis** (see page 84). Then, plot these drivers on a **2x2 Matrix** based on two factors: their potential **Impact** and their level of **Uncertainty**. The drivers that land in the top-right quadrant (High Impact, High Uncertainty) are your “critical uncertainties.”

Step 2: Build the Scenario Framework

From the prioritized list, select the top two most critical uncertainties to form the axes of your scenario framework. The endpoints of each axis should represent two plausible extremes. For example, for the future of mobility, the axes could be “Level of Regulation” (High vs. Low) and “Dominant Energy Source” (Fossil-Fuel vs. Renewable). This creates a grid with four distinct and equally plausible future worlds.

Step 3: Develop the Scenarios

Bring the four quadrants to life by writing a compelling narrative for each one. Give each scenario a memorable name to make it tangible. The story should describe what that future world looks and feels like, what has happened to get there, and what its key characteristics are. These narratives can be further enriched by creating **Future Personas** (see page 144) who live within each scenario.

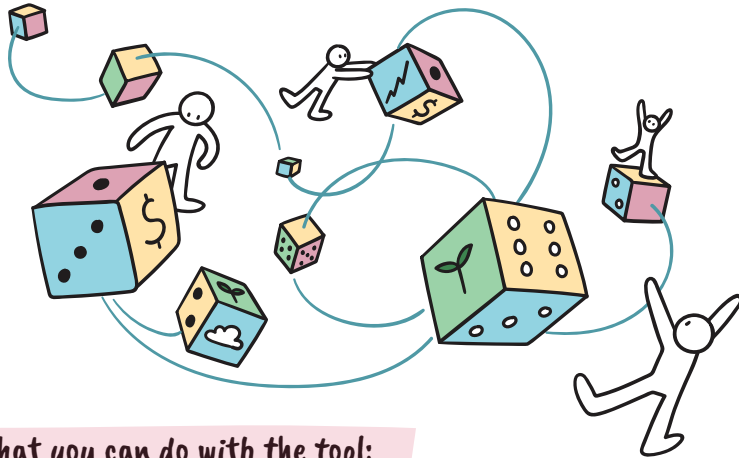


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Probability/Impact Matrix

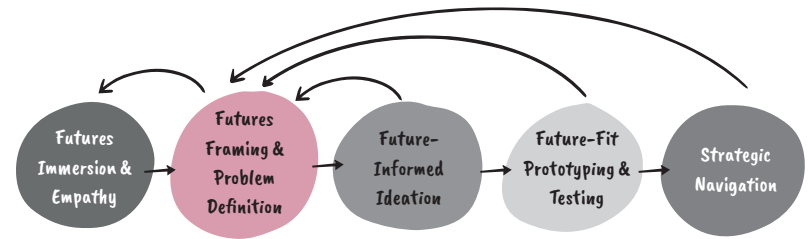
I would like to...

...prioritize a list of trends, signals, or potential future events to focus our attention on the most critical factors.



What you can do with the tool:

- Systematically assess a wide range of potential future events or trends.
- Distinguish between events that are merely interesting and those that are strategically critical.
- Create a clear, visual map for prioritizing risks and opportunities.
- Build team alignment on which uncertainties require the most attention and resources.
- Provide a rational basis for strategic decisions about where to focus deeper futures thinking activities.



Expert Tips

Focus on the “Wild Cards”

Teams often focus exclusively on high-probability events. However, the most transformative strategic insights often come from the “High Impact/Low Probability” quadrant. These are the potential wildcards. Dedicate specific time to explore these events, as they represent the kinds of disruptions that traditional planning often misses.

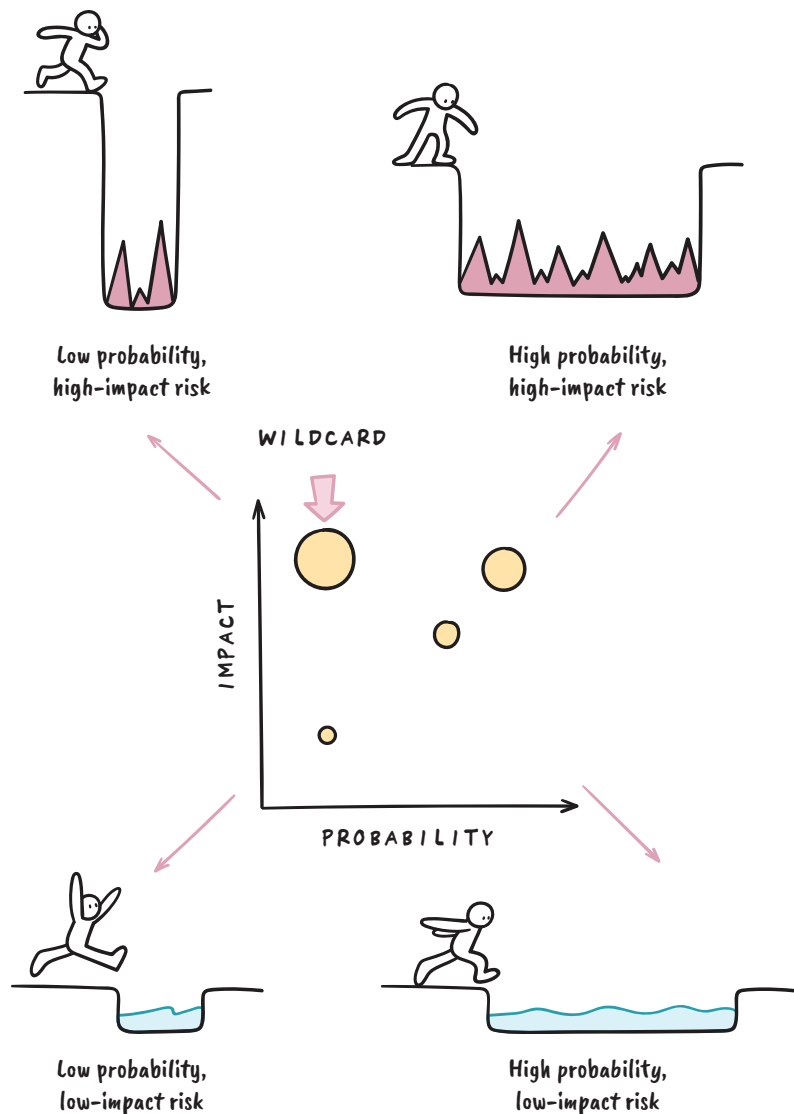
Define Your Scales First

Before plotting, align as a team on what “High Impact” or “Low Probability” means in a specific context. Does “High Impact” mean a significant change in human well-being or a major ecological disruption? Defining the scales up front prevents confusion and ensures a more consistent evaluation.

Use This as an Input for Scenarios

The Probability/Impact Matrix is the perfect precursor to Scenario Planning (see page 92). The “High Impact/Low Probability” events are the critical uncertainties. These prioritized factors should be used as the axes for a scenario framework to ensure the stories about the future are focused on the drivers that matter most.

How this tool is applied:



The Probability/Impact Matrix is a fundamental tool for sorting through the noise of the future. It helps a team move from a long list of possibilities to a focused set of high-priority items that warrant further investigation.

Step 1: Brainstorm Potential Events and Trends

As a team, generate a comprehensive list of potential future events, signals, or trends relevant to the topic. The source of these should be the outputs from a **Horizon Scanning** (see page 84) or **PESTLE Analysis** (see page 80) activity. Aim for quantity at this stage.

Step 2: Assess Probability and Impact

For each item on your list, assess two key dimensions:

- **Probability:** How likely is this event or trend to occur within your defined timeframe (e.g., on a scale from Low to High)?
- **Impact:** If it were to occur, what would be the magnitude of its impact on your organization, project, or community (e.g., on a scale from Low to High)?

Step 3: Map the Items onto the Matrix

Place each item onto the 2x2 matrix according to its assessed probability and impact. This will visually sort your list into four distinct quadrants.

Step 4: Prioritize and Define Action

Categorize the items mapped onto the matrix into clear strategic groups.

- **High Impact/High Probability:** Critical priorities that require immediate strategic planning.
- **High Impact/Low Probability:** “Wildcards” or potential “black swans” that need to be monitored and considered in scenario planning.
- **Low Impact/High Probability:** Nuisances that may require monitoring or minor adaptation but are not strategic priorities.
- **Low Impact/Low Probability:** Items that can be safely ignored for now, freeing up mental and strategic resources.

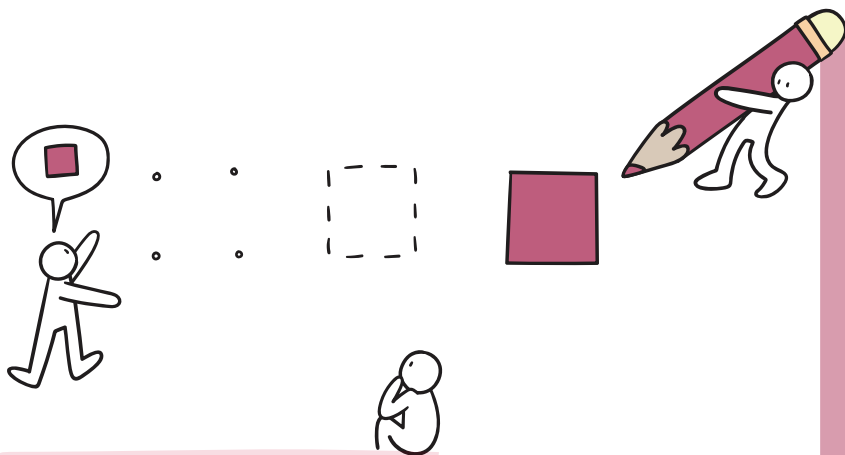


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<http://www.design-humanity.com/en/probability-impact>

Pattern Recognition

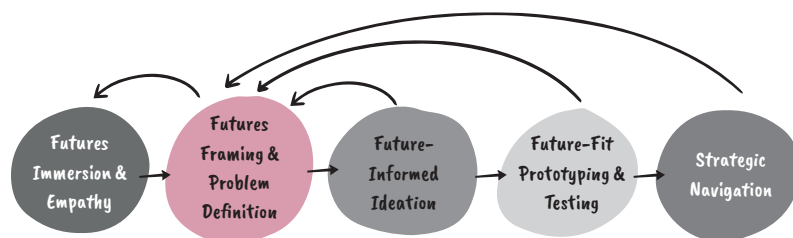
I would like to...

...make sense of diverse and seemingly disconnected information by identifying meaningful themes, connections, and relationships.



What you can do with the tool:

- Transform a chaotic collection of individual signals and trends into a set of coherent, underlying patterns.
- Uncover deeper systemic shifts that are not obvious from any single piece of information.
- Move from simply collecting data to generating genuine foresight about where the world is heading.
- Create a solid foundation for more advanced foresight activities, such as **Causal Layered Analysis** (see page 90) and **Scenario Planning** (see page 92).
- Build a shared understanding within a team about the key dynamics shaping the future.



Expert Tips

Look for Tensions and Contradictions

Patterns are not always simple trends. Some of the most valuable insights come from identifying tensions in the data. Exploring the dynamic between conflicting signals is often more insightful than analyzing either one in isolation.

Combine, Do Not Just Categorize

Avoid simply putting signals into neat boxes. Discover emergent patterns by creating novel connections between seemingly disparate pieces of information. Ask, "What is the relationship between this technological trend and that social value shift?"

Visualize Your Patterns

Do not let patterns remain as text on a page. Create a visual "pattern map" or "constellation diagram" that shows how the signals connect into larger themes. This makes the relationships easier to understand, communicate, and use for building scenarios.

How this tool is applied:

EXAMPLE: CLUSTERING SIGNALS FOR THE “FUTURE OF FOOD”

Signal A: A startup successfully 3D-prints a nutritionally complete, plant-based steak.

Signal B: A report shows rising consumer demand for food supply chains traced via blockchain.

Signal C: A popular documentary criticizes the environmental and ethical costs of industrial animal farming.

Signal D: Venture capital funding for cellular agriculture (lab-grown meat) has tripled in the past year.

Signal E: A social media trend involves influencers sharing their personal “food carbon footprint” scores.

Signal F: Gene-editing technology is being used to create hyper-efficient, drought-resistant crops.



Cluster 1: The Bio-Convergence of Food

This pattern connects the signals related to the technological reinvention of food production.

=> **Included Signals:** A, D, F

=> **Nascent Pattern:** Technology is fundamentally reshaping what food is and how it is made, moving production from the farm to the lab.

Cluster 2: The Rise of the Conscious Consumer

This pattern connects signals related to a shift in consumer values and awareness.

=> **Included Signals:** B, C, E

=> **Nascent Pattern:** Consumers are increasingly making purchasing decisions based on ethical, environmental, and health-related data, not just on taste or price.

Pattern recognition is the essential process of synthesis that turns the raw information from **Horizon Scanning** (see page 80) into strategic foresight. It involves a systematic search for connections and recurring themes among the collected signals.

Step 1: Immerse in the Data

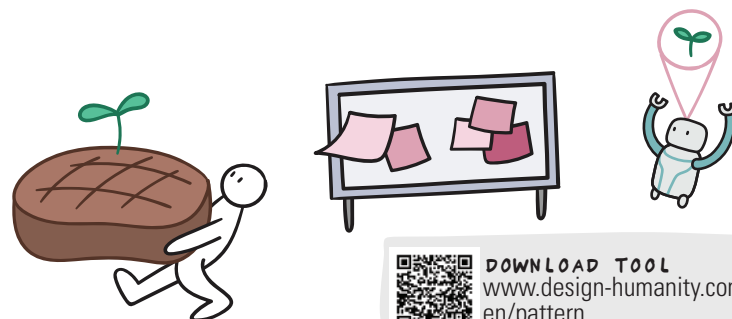
Gather all the signals, trends, and data points the team has collected and display them in a shared space, such as a physical wall or a digital whiteboard. Allow the team time to individually and collectively immerse themselves in the information without immediately trying to find answers.

Step 2: Cluster and Theme

Begin to group related items together. Look for affinities, direct connections, or recurring ideas. These initial groupings are the nascent patterns. Give each cluster a descriptive name or theme that captures its essence, for example, “Decentralization of Trust” or “The Rise of Regenerative Materials.”

Step 3: Articulate the Pattern

For each major cluster, articulate the deeper pattern it represents. A pattern is more than just a summary; it is an insight into a significant, underlying shift. Describe what is happening, why it is happening, and what its potential implications are. This transforms a simple collection of signals into a powerful piece of strategic intelligence.

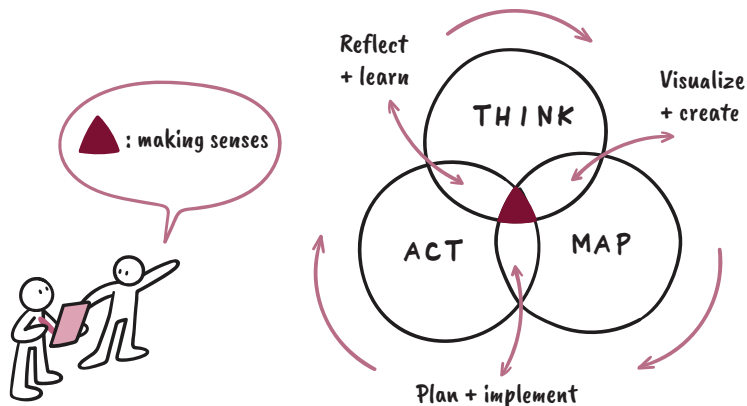


DOWNLOAD TOOL
www.design-humanity.com/en/pattern

Sensemaking

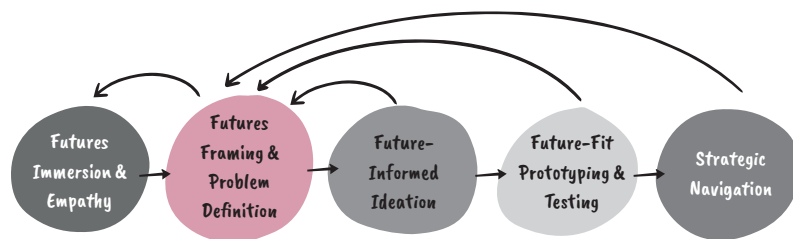
I would like to...

...interpret ambiguous, complex information and patterns to create a coherent and shared understanding of what the future might hold.



What you can do with the tool:

- Transform complex data and abstract patterns into meaningful strategic narratives.
- Frame and contextualize foresight work to ensure its relevance and impact.
- Move from simply identifying "what" is happening to understanding the deeper "so what?" for an organization and community.
- Create the essential bridge between the analysis from **Pattern Recognition** (see page 96) and the creative work of **Scenario Planning** (see page 92).
- Align a team around a shared story of the future, enabling more effective and coordinated strategic action.



Expert Tips

Make It a Dialogue, Not a Monologue

Sensemaking is a collaborative act. Avoid having a single person or a small group create the "official" interpretation. Use workshops and interactive sessions where the entire team can contribute to building the narrative together. The best insights often emerge from the dialogue and debate.

Combine, Do Not Just Categorize

There is rarely a single, correct interpretation of a complex future pattern. Encourage the team to explore multiple plausible meanings. What if this trend is not a threat but an opportunity? What if two conflicting patterns are actually two sides of the same coin? This builds strategic flexibility.

From Sensemaking to Storytelling

The output of sensemaking is a powerful story. Turn this story into a tangible artifact, such as a short presentation, a visual map, or a one-page summary. Storytelling is the most effective way to communicate the complex implications of foresight work and to align decision-makers around a shared vision of the future.

How this tool is applied:

Sensemaking is the critical process of creating shared meaning from the patterns you have identified. It is less a single action and more a collaborative effort to narrate and contextualize complex information, turning foresight into insight.

Step 1: Frame the Narrative

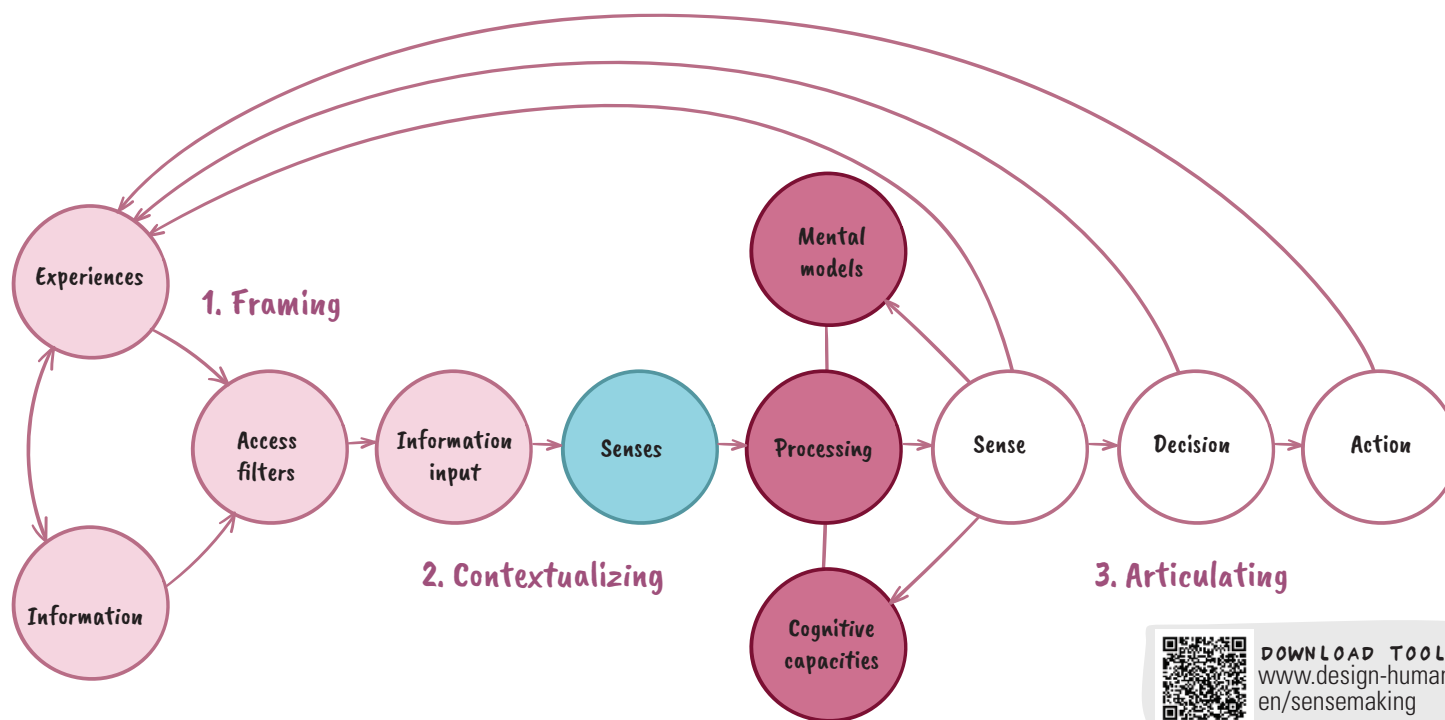
Start with the key patterns and themes identified during **Pattern Recognition (see page 96)**. For each one, begin to construct a narrative by asking: What is the story here? How did this pattern emerge, and where might this be leading? Frame the information in a way that is relevant to the core challenge.

Step 2: Contextualize the Meaning

Place the narrative into a broader context. How does this story connect to the needs of the stakeholders, the goals of the organization, or the well-being of the planet? This step ensures the interpretation is not just an interesting observation but a strategically relevant insight.

Step 3: Articulate the Implications

The final step is to clearly articulate the “so what.” Based on the narrative, what are the key implications, challenges, and opportunities for the future? This creates a clear and compelling understanding that can directly inform the development of scenarios, strategies, and new ideas.

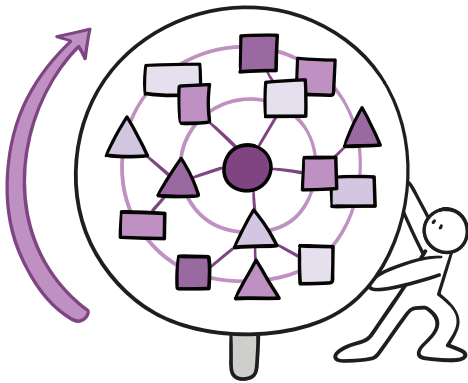


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www.design-humanity.com/en/sensemaking

Futures Wheel

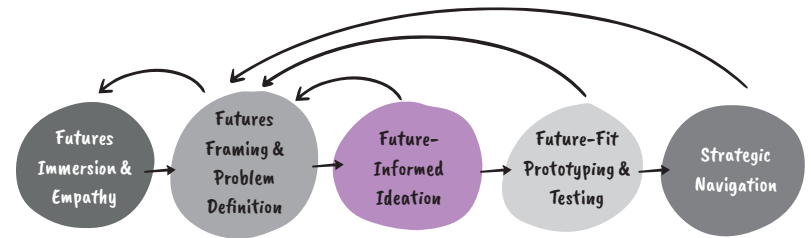
I would like to...

...systematically explore the direct and indirect consequences of a future change to uncover hidden opportunities and risks.



What you can do with the tool:

- Move beyond first-order thinking to map the cascading, ripple-effect impacts of a trend or event.
- Identify unexpected connections and second- or third-order consequences that are not immediately obvious.
- Stimulate creative thinking by revealing unforeseen challenges that require innovative solutions.
- Facilitate a structured and comprehensive brainstorming session about the future implications of a change.
- Build a deeper and more systemic understanding of how a single trend can reshape an entire system.



Expert Tips

Look for Opportunities in the Consequences

The goal is not just to map problems. Every consequence, especially in the second and third rings, is a potential area for innovation. A consequence like “decline of rural farming communities” can be reframed as a **“How Might We”** question to spark new ideas.

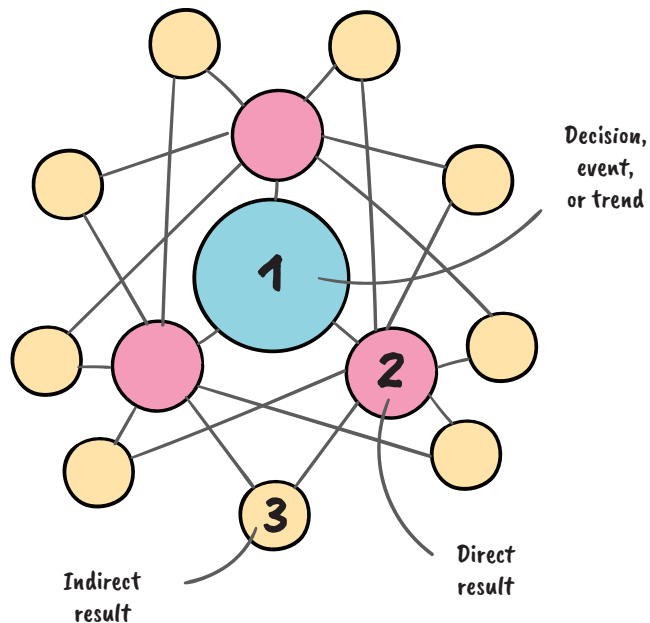
Balance Positive and Negative Paths

A common pitfall is to focus only on dystopian or negative consequences. Intentionally push the team to explore positive ripple effects as well. A balanced view that considers both opportunities and threats will lead to more robust and realistic insights.

Use It to Test a Desired Future

Do not just use the wheel for external trends. Place a proposed solution or a **“Future Headline”** (see page 104) in the center. Exploring the full spectrum of its potential consequences is a powerful way to stress-test an idea and is a foundational practice for the **Ethical Consequences Scanner** (see page 162).

How this tool is applied:



Example consequences:

Consequence Path 1: The Nature of Work

2nd order: ...

3rd order: ...

Consequence Path 2: Social Structure & Communication

2nd order: ...

3rd order: ...

Consequence Path 3: The Human Experience

2nd order: ...

3rd order: ...



DOWNLOAD TOOL
www.design-humanity.com/en/futures-wheel

The futures wheel is a visual brainstorming tool that helps a team map the cascading consequences of a future event. It encourages a structured exploration of what might happen next.

Step 1: Define the Central Event

Place the specific future trend, event, or change you want to explore in the center of a large canvas. Be as precise as possible.

Example Step 1: "By 2040, Brain-Computer Interfaces (BCIs) are widely adopted, co-existing with the emergence of artificial general intelligence (AGI)."

Step 2: Brainstorm First-Order Consequences

As a team, brainstorm the direct, immediate consequences of the central event. These are the "if-then" results. Write each consequence on a sticky note and place it in a circle around the central idea, connecting them with lines.

Example first-order consequence: "If everyone has a BCI, **then** communication becomes instantaneous and telepathic."

Example first-order consequence: "If AGI and BCIs co-exist, **then** human intelligence is seamlessly augmented with machine intelligence."

Step 3: Explore Second- and Third-Order Consequences

For each first-order consequence, repeat the process. Ask, "If this happens, what happens next?" This will reveal the second-order consequences. Repeat the process again for the most significant second-order impacts to uncover the third-order consequences. This outward expansion reveals the full ripple effect of the initial change.

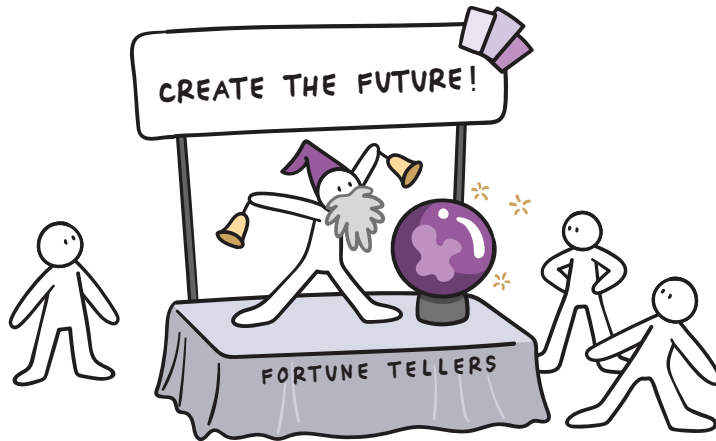
Example second-order consequence (from "telepathic communication"): "If communication is telepathic, **then** the concept of personal privacy is fundamentally redefined."

Example third-order consequence (from "redefined privacy"): "If privacy is redefined, **then** new social norms and legal frameworks must be created to govern 'thought crime' and mental autonomy."

Creative Mash-Up

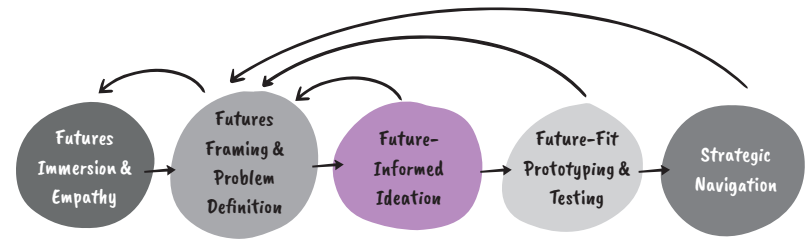
I would like to...

...spark novel ideas by forcing the combination of two or more unrelated concepts.



What you can do with the tool:

- Break free from conventional thinking and incremental improvements.
- Generate a high volume of unexpected and original ideas in a short amount of time.
- Systematically explore new possibilities at the intersection of different domains.
- Create a playful and energetic atmosphere that encourages creative risk-taking.
- Develop future-ready concepts by combining current needs with future trends.



Expert Tips

Embrace the Absurd

Not every mash-up will lead to a viable idea, which remains the point. Some of the most absurd combinations can unlock the most creative thinking. Do not discard a pairing because it seems strange. Lean into the absurdity and see what unexpected ideas it sparks.

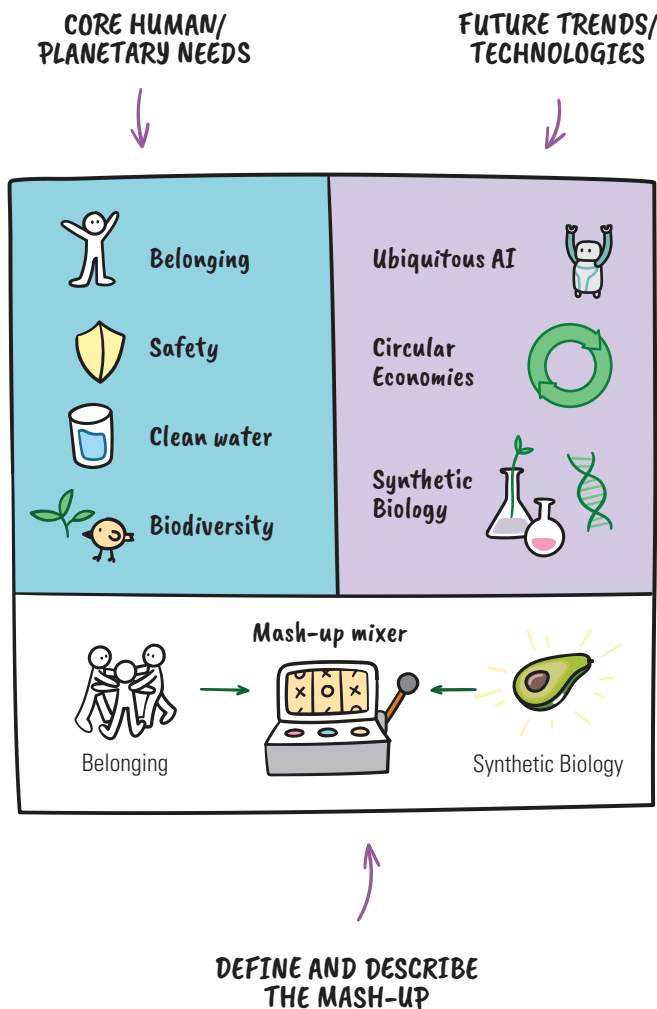
Use Visuals for Your Lists

Instead of just using words for the two lists, use images. For "Core Human Needs," use evocative photos. For "Future Trends," use futuristic illustrations. This will make the mash-up process more creative and less analytical.

Reverse the Mash-Up

If a team gets stuck, reverse the prompt. Instead of asking what product combines "Safety" and "Ubiquitous AI," ask: "In a world with 'Ubiquitous AI,' how would the fundamental human need for 'Safety' be completely redefined?" This shift in perspective can lead to deeper, more systemic innovations.

How this tool is applied:



The creative mash-up is a powerful ideation technique that operates on the principle that innovation often emerges from combining existing elements in new ways. In a futures context, it involves a structured collision of ideas to generate unique concepts.

Step 1: Create Two Distinct Lists

On a large canvas, create two columns.

- Column A: Core Human & Planetary Needs.** List fundamental and timeless needs. These could be derived from empathy work or frameworks like the **Social Foundation** (see page 204) from the Doughnut Economics model (e.g., "Belonging," "Safety," "Clean Water," "Biodiversity").
- Column B: Future Trends & Technologies.** List the speculative trends and technologies identified during **Horizon Scanning** (see page 80) or **Exponential Trends Scanning** (see page 286) (e.g., "Ubiquitous AI," "Circular Economies," "Synthetic Biology").

Step 2: Force Random Combinations

Systematically or randomly, draw a line connecting one item from Column A to one item from Column B. The goal is to create an unexpected pairing. For example, connect "Belonging" with "Synthetic Biology," or "Safety" with "Ubiquitous AI."

Step 3: Brainstorm the Mash-Up

For each pairing, use it as a creative prompt for a short, focused brainstorm. Ask the team: "What kind of product, service, or experience could exist at the intersection of these two concepts?" For "Belonging + Synthetic Biology," ideas might include bio-luminescent tattoos that change color when near a friend or a community garden that grows a unique, shared food source.

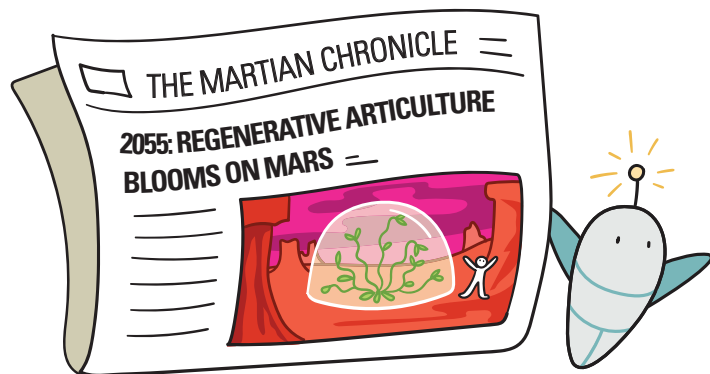


DOWNLOAD TOOL
www.design-humanity.com/en/mash-up

Future Headline

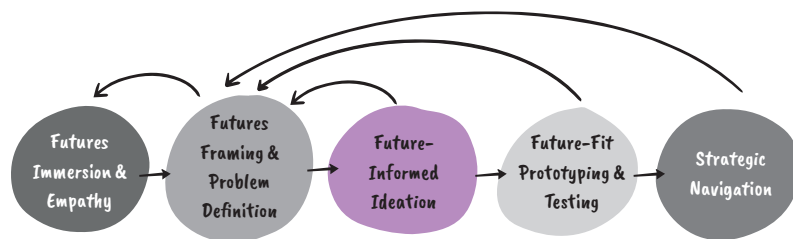
I would like to...

...use a compelling future vision as a direct prompt for generating innovative ideas.



What you can do with the tool:

- Bridge the gap between abstract future scenarios and concrete ideation.
- Generate “breakthrough” ideas by starting with a successful outcome and working backward.
- Create a powerful and memorable vision that aligns and energizes a team.
- Encourage creative, narrative-based thinking rather than purely analytical brainstorming.
- Provide a clear and tangible focal point for an entire innovation project.



Expert Tips

Make It Tangible

Do not just write the headline on a sticky note. Design a realistic front page of a newspaper or a screenshot of a news website from the future. The more tangible and believable the artifact is, the more powerful it will be as a creative prompt.

Write from Different Perspectives

To generate a wider range of ideas, create multiple headlines about the same future event from different perspectives. What would the headline be in a mainstream newspaper versus a niche industry journal or a skeptical blog? Each perspective will uncover different aspects of the future being explored.

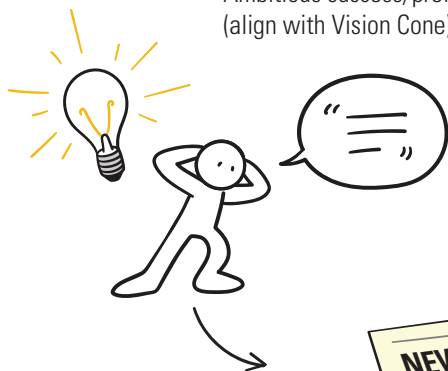
Combine with Other Tools

Use a powerful headline as the central event for a futures wheel (see page 100). This allows for the exploration of not only the positive innovations that led to the headline but also the potential second- and third-order consequences, both positive and negative, that might result from that success.

How this tool is applied:

Step 1: Envision a preferable future

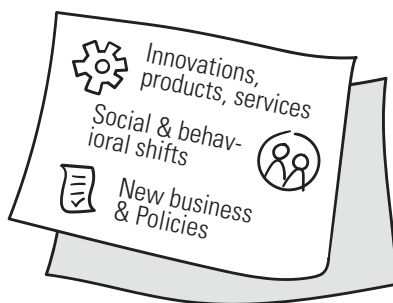
Ambitious success/preferable future
(align with Vision Cone)



Step 2: Write the headline



Step 3: Brainstorm the backstory



FUTURE-INFORMED IDEAS

Future Headlines is a creative technique that reverses the typical brainstorming process. Instead of starting with a problem and generating ideas, you start with a headline from a future where a major, positive outcome has already been achieved.

Step 1: Envision a Preferable Future

Based on the foresight work, envision a bold and ambitious success for the project, community, or for humanity. This should be a significant achievement that aligns with the "preferable future" identified in the **Vision Cone** (see page 61).

Step 2: Write the Headline

As a team, write a clear, compelling, and specific news headline that announces this future success. The headline should be dated 5, 10, or even 20+ years in the future.

For example: "Global Literacy Rate Reaches 99% as AI Tutors Become Freely Accessible to All" or "Amazon Rainforest Deforestation Reversed for the First Time in a Century" or "Regenerative Agriculture Blooms on Mars."

Step 3: Brainstorm the "Backstory"

With the headline as your endpoint, brainstorm the "story behind the story." Ask the team:

- What innovations, products, or services had to be created for this headline to be true?
- What social or behavioral shifts occurred?
- What new business models or policies were implemented? The answers to these questions are your future-informed ideas.

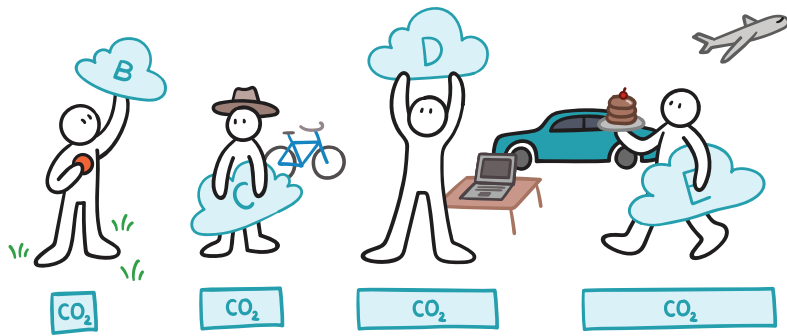


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en/future-headline](http://www.design-humanity.com/en/future-headline)

Object from the Future

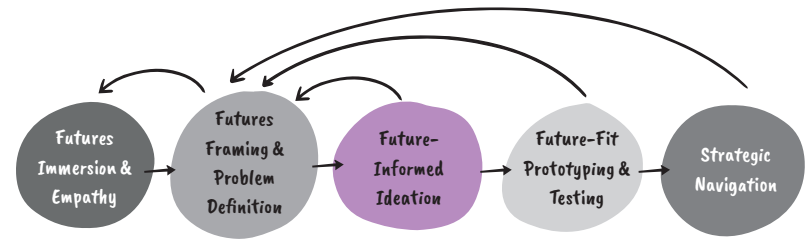
I would like to...

...make a future scenario tangible and explore its implications through a physical or digital artifact.



What you can do with the tool:

- Transform abstract future concepts into concrete, relatable objects.
- Spark deep, empathetic conversations about the human experience in a potential future.
- Test the implications of a future scenario in a hands-on, experiential way.
- Unlock novel ideas by focusing on the details of how an object would be designed and used in a different world.
- Create a powerful storytelling artifact that communicates a future vision more effectively than words alone.



Expert Tips

Focus on the Story, Not the Technology

Do not aim to accurately predict future technology. Find value in the story the object tells about the people and the culture of its time. An object that reveals a new social norm or a shift in human values is often more insightful than one that simply showcases futuristic tech.

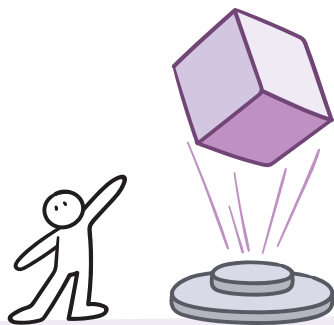
Use the Object as an Interview Prompt

The artifact you create is a powerful research tool. Present your "object from the future" to stakeholders or users and ask them to interact with it. Ask questions like, "What do you think this is? Who would use it? What does it tell you about the world it came from?" Their reactions will provide rich insights into the desirability of your envisioned future.

Prototype the "Negative" Object

To explore potential dystopian futures or unintended consequences, try creating an object that represents a negative outcome. An artifact like a "personal carbon-rationing card" or a "social credit score statement" can provoke powerful conversations about the kind of future we want to avoid and, therefore, what we must do in the present to steer away from it.

How this tool is applied:



What if this object, which offers perfect convenience, has an unintended consequence that erodes a fundamental human skill or freedom (e.g., the ability to navigate, to remember, or to be truly alone)?

What if this object solves our current planetary waste problem but, in doing so, creates a new and unforeseen ecological dependency that is even more fragile?

What if this object can only exist in an economic model that is not based on individual ownership or exponential growth but on shared access and regeneration?

What if this object, designed to connect humanity in a deeper way, accidentally creates a new and more profound kind of social divide between those who embrace it and those who refuse it?

What if this object is a symbol of a future that has successfully achieved resilience, and what difficult but necessary trade-offs about our present-day lives does its existence force us to confront?

Object from the Future is a creative prototyping method that challenges a team to design and create a tangible artifact that would exist in a specific future scenario. This moves ideation from the conceptual to the concrete.

Step 1: Choose a Future Scenario

Select one of the compelling future scenarios you developed during your **Scenario Planning (see page 92)** activity. Be clear about the key characteristics and rules of this future world.

Step 2: Brainstorm an Everyday Object

As a team, brainstorm a list of common, everyday objects that a **Future Persona (see page 144)** would interact with (e.g., a food package, a child's toy, a medical device). Select one object that would likely be significantly different in the chosen future.

Step 3: Design and Prototype the Future Object

Create a low-fidelity prototype of the chosen object as it would exist in the future scenario. Do not just focus on aesthetics; consider the entire user experience. What materials is it made from? What information does it display? What does its use imply about the values and economy of that future? For example, a food package from a "circular economy" future might be edible or made from self-composting materials.

Step 4: Ask "What if" Questions

Use the object as a prompt to ask deep, critical questions about the systemic implications of that future. The powerful "what if" questions explore the deeper consequences and the impact on the system-of-systems.

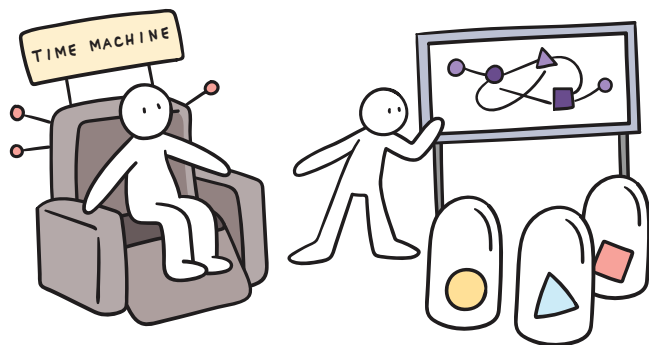


DOWNLOAD TOOL
[www.design-humanity.com/
en/future-object](http://www.design-humanity.com/en/future-object)

Experiential Futures

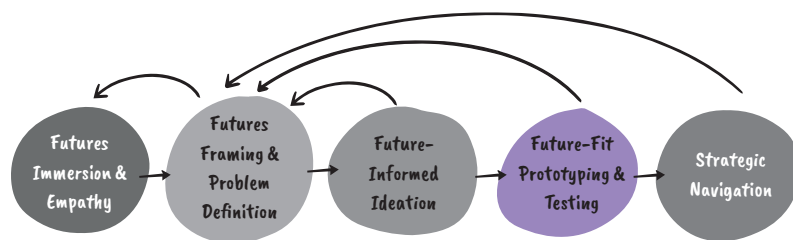
I would like to...

...move beyond just describing a future and create an immersive experience that allows people to “feel” what it might be like to live there.



What you can do with the tool:

- Make abstract future scenarios tangible, emotional, and memorable for stakeholders.
- Generate deep, empathetic insights by observing how people react and behave within a simulated future environment.
- Test the human and social implications of a future concept, not just its technical feasibility.
- Facilitate more profound and meaningful conversations about the kind of future we want to create or avoid.
- Create powerful storytelling artifacts that communicate a future vision far more effectively than a report or presentation.



Expert Tips

Engage All the Senses

The most powerful experiential futures are multisensory. Do not just focus on what people will see. Consider the sounds, smells, and even the tastes of the future being prototyped. A simple audio track or a specific scent can make the experience dramatically more immersive.

Prototype the Mundane

While it is tempting to create spectacular, high-tech artifacts, some of the most profound insights come from prototyping the mundane objects of a future world. A receipt, a bus ticket, or a piece of junk mail from the future can reveal more about its underlying values and systems than a shiny gadget.

Use It for Co-creation

Do not just use the experience as a test. Use it as a platform for co-creation. After the initial immersion, invite participants to modify the artifacts or create new ones that would improve their experience. This turns the audience into active collaborators in the design of a preferable future.

How this tool is applied:

Experiential Futures is a prototyping method that uses tangible artifacts and immersive scenarios to bring a potential future to life. It shifts the focus from talking about the future to experiencing a piece of it directly.

Step 1: Choose a Scenario and a Human Context

Select a specific future scenario developed during **Scenario Planning**. Then, define a relatable human context within that future, such as “a family grocery shopping trip in a world of personalized nutrition” or “a student’s first day at a university without physical classrooms.”

Step 2: Create the “Artifacts from the Future”

Brainstorm and create the tangible objects that would exist in this context, using the **Object from the Future (see page 106)** tool. These artifacts are the prototypes. They could be physical, like a “carbon ration card,” or digital, like a simulated user interface for a future service.

Step 3: Stage the Immersive Experience

Set up an environment where participants can interact with the future artifacts in a simulated scenario. This can be as simple as a tabletop display or as complex as a fully staged room. Guide participants through the experience, encouraging them to think aloud and react naturally. The goal is to observe their authentic behaviors and emotional responses.

Example Prototypes for “Object from the Future”

1. Paper Prototypes of a “Digital Twin” Interface: A series of hand-drawn sketches showing the user interface for a city-management dashboard that allows citizens to see the real-time health of their local ecosystem (e.g., air quality, water levels, biodiversity) and vote on environmental policies.

2. A “Personal Carbon Currency” Wallet (Mock-Up): A physical, 3D-printed mock-up of a personal device, similar to a credit card or mobile phone, that displays a user’s daily “carbon budget” and shows how different lifestyle choices create debits and credits.

3. An “Edible Food Packaging” Sample: A real, tangible prototype of a food wrapper made from a seaweed or plant-based polymer. The prototype is not just compostable but also safe and nutritious to eat, demonstrating a future without single-use plastic waste.

4. A “De-Extinction” Educational Toy (Storyboard): A visual storyboard, like a comic strip, that illustrates how a child would interact with a future toy. The story shows the child caring for a digital habitat to “bring back” an extinct species, teaching concepts of ecological stewardship.

5. A “Post-Growth” Corporate Annual Report (PDF): A professionally designed, multipage PDF of an annual report for a major corporation from the year 2050. The report’s key success metrics are not profit and growth but “Regenerative Impact,” “Employee Well-Being,” and “Community Resilience.”

6. A “Modular, Repairable Smartphone” (Physical Model): A physical, nonfunctional model made of simple, snap-together components (camera, battery, screen). This prototype demonstrates a future based on a circular economy, challenging the concept of disposable electronics.

7. A “BCI-Powered Empathy” Headset (Role-Playing Script): A short script for a role-playing scenario where one person acts as a conflict mediator using a mock-up headset. The script guides them to describe what it feels like to briefly experience the emotional perspective of the other person.

8. A “Democratic AI” Governance Interface (Interactive Mock-Up): A simple, clickable digital prototype of a voting interface. The mock-up allows users to simulate providing input on the ethical rules and priorities governing a public AI system, like an autonomous public transport network.

9. A “Cross-Generational Storytelling” Device (Audio Prototype): A short audio file that simulates the experience of using a simple, screen-less device. The audio prototype would feature a child’s voice asking a question, a pause, and then the voice of an elderly relative telling a story in response.

10. A “Future of Work” Employment Contract (Document): A one-page employment contract from the year 2045. The document’s terms would reflect a future of work dominated by AI and automation, with clauses not for a “job” but for “lifelong learning contributions,” “creative output,” and a “guaranteed basic income.”



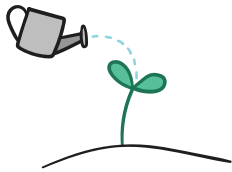
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en/futures-experimental](http://www.design-humanity.com/en/futures-experimental)

Wind Tunneling

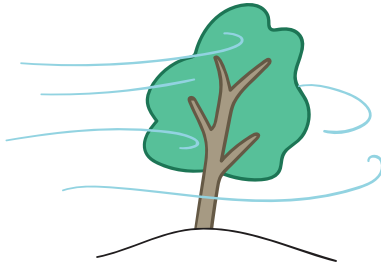
I would like to...

...test the resilience of our current strategies, products, or ideas against a range of different future scenarios.

STREATEGY

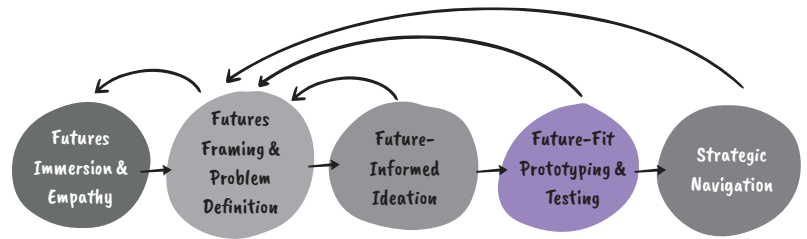


RESILIENCE



What you can do with the tool:

- Identify the strengths and weaknesses of a strategy when it is exposed to different future conditions.
- Uncover hidden vulnerabilities and assumptions in your current plans.
- Develop more robust and exponentializing strategies that can adapt and even thrive in the face of uncertainty.
- Facilitate a structured and objective conversation about the long-term viability of a project or idea.
- Make more confident decisions by understanding how a strategy performs across a spectrum of possibilities, not just a single predicted outcome.



Expert Tips

Look for Common Threads

After testing a strategy against all scenarios, look for common themes. Are there specific weaknesses that were exposed in multiple futures? Are there strengths that held up across all of them? These common threads are often the most critical areas for strategic adjustment.

Test for “Thrive-ability,” Not Just Survival

Do not just check if a strategy “survives” in a different future. Ask what it would take for the idea to thrive. This shifts the focus from a defensive posture to a creative and opportunistic one.

Develop “If-Then” Action Triggers

The output of a Wind Tunneling exercise can be a set of “if-then” strategic triggers. For example: “We will continue with Strategy A, but **if** we see early signals that Scenario B is emerging (e.g., a specific new regulation is passed), **then** we will pivot to Strategy B.1.” This creates a truly adaptive strategy.

How this tool is applied:

Wind Tunneling is a strategic stress test. The process involves metaphorically placing your current strategy or idea into the “wind tunnel” of each future scenario you have developed to see how it holds up under pressure.

Step 1: Clearly Define the Strategy or Idea

Before a strategy can be tested, it must be articulated clearly. What is the core value proposition? What are the key assumptions the plan is based on? What are the critical success factors? Be as specific as possible.



DOWNLOAD TOOL
www.design-humanity.com/en/wind-tunneling

Step 2: Revisit the Future Scenarios

Select the two to four distinct future scenarios created using the **Scenario Planning and the 2x2 Matrix (see page 111)** tool. Briefly review the key characteristics and “rules” of each of these future worlds to ensure the whole team has them fresh in their minds.

Step 3: Run the Wind Tunnel Test

For each scenario, the team should ask a series of critical questions: In this future, does our strategy succeed or fail? Why? Which core assumptions are challenged or invalidated in this scenario? What new opportunities or threats emerge for the idea in this world? How would the strategy need to adapt or pivot to thrive in this future?

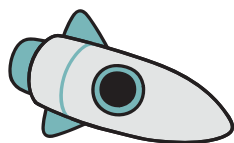
STEPS 2 & 3: RUN THE WIND TUNNEL TEST (Revisit Scenarios & Critically Question)

Future Scenario 1: Sustainable Utopia
(E.g., Green Tech Dominance)

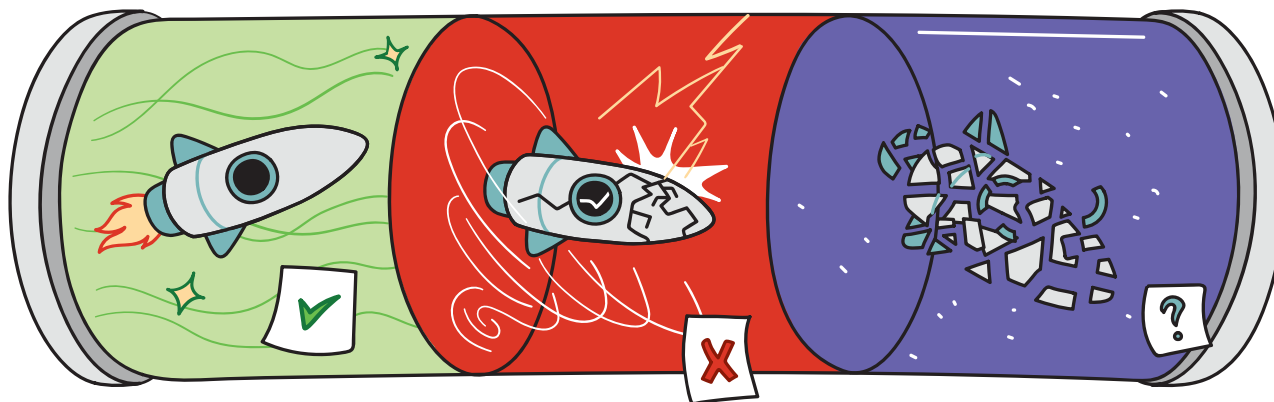
Future Scenario 2: Tech Dystopia
(E.g., AI Control, Privacy Loss)

Future Scenario 3: Resource Scarcity
(E.g., Water Wars, Economic Collapse)

**Current
Strategy / Idea**



**STEP 1:
DEFINE STRATEGY**

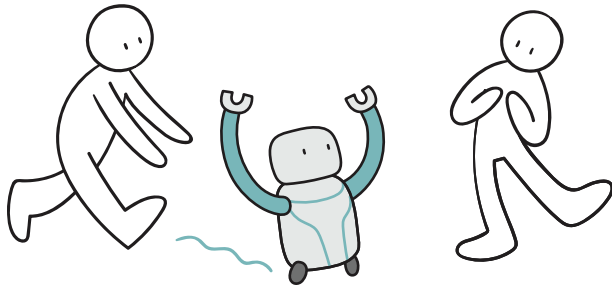


OUTCOME: ADAPT, PIVOT, OR THRIVE? (Future-Informed Decisions)

Future Role-Playing

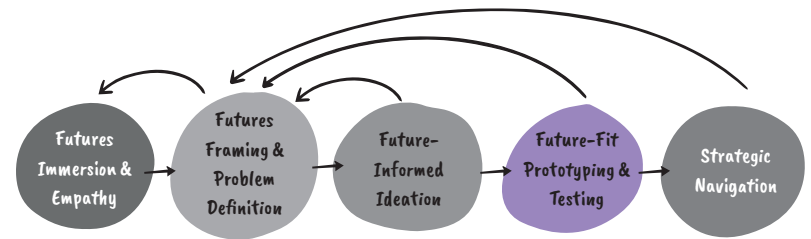
I would like to...

...explore the human, social, and emotional dynamics of a potential future in an immersive, interactive way.



What you can do with the tool:

- Move beyond technical testing to understand the real-world human experience of a future scenario.
- Uncover unforeseen social norms, conflicts, power dynamics, and ethical dilemmas.
- Build deep, embodied empathy for the people who will live in the future you are designing.
- Generate rich, qualitative insights that are often missed in purely analytical exercises.
- Test and refine the design of services, social systems, and human interactions, not just physical products.



Expert Tips

Use Simple Props and Artifacts

A high-tech stage is not needed. Use simple props and some of the Objects from the Future (see page 106) already created to make the scene more believable. A printed “AI Diagnostic Report” or a redesigned doctor’s office layout can be enough to make the role-play much more immersive.

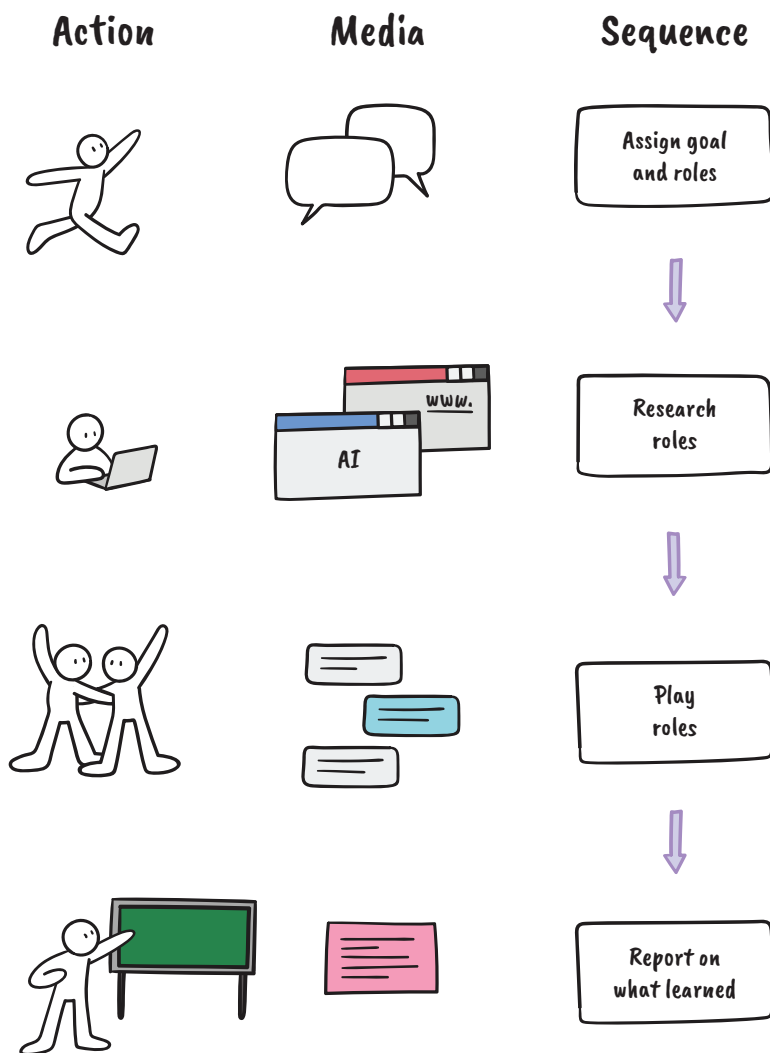
Focus on the Debriefing

The most valuable insights often come from the debriefing session immediately after the role-play ends. Ask participants: “What did you feel in your role? Where were the moments of tension or confusion? What surprised you about the interaction?” These reflections are where the deep learning occurs.

Introduce a “Wild Card” Event

To test the resilience of the social system, have the facilitator introduce an unexpected “wild card” event midway through the role-play. For example, “The AI system suddenly goes offline.” Observing how the participants negotiate this disruption can be incredibly insightful.

How this tool is applied:



Future Role-Playing is an immersive method where participants act out a specific situation as if they were living in a future scenario. It is a powerful way to prototype and test the social systems that might emerge around a new technology or trend.

Step 1: Define the Scenario and Context

Choose a specific future scenario and a clear, relatable human context within it. For example: “A family doctor’s consultation in a world where AI handles all primary diagnostics,” or “A community meeting to resolve a resource dispute in a city powered entirely by a decentralized energy grid.”

Step 2: Assign Roles and Personas

Assign clear roles to the participants. These should be specific **Future Personas** (page 144) with their own goals, values, and perspectives. For the medical scenario, roles could include the “AI-Assisted Patient,” the “Human Doctor” (whose role is now more of a coach), and the “AI System” itself (perhaps represented by a facilitator reading from a script).

Step 3: Act Out the Scenario

Have the participants act out the defined situation for a set period of time, such as 10–15 minutes. Encourage them to improvise and react authentically based on their assigned role. Do not aim to perform perfectly. Focus on exploring the interactions and emotions that arise naturally. The rest of the team should observe carefully.

To capture the observations, well-known design thinking tools like the **AEIOU framework** can be used. It observes and documents the **A**ctivities, **E**nvironments, **I**nteractions, **O**bjects, and **U**sers.

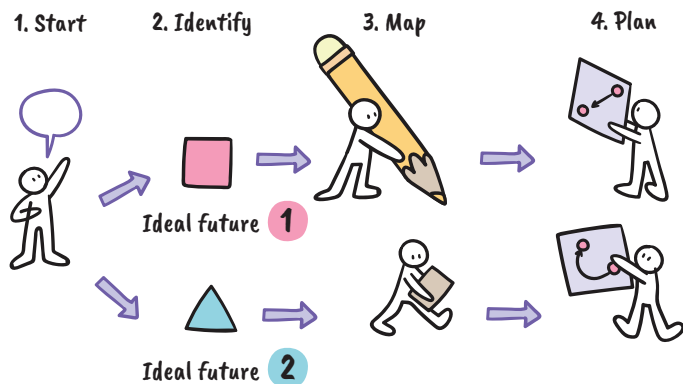


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www.design-humanity.com/en/future-role-playing

Backcasting

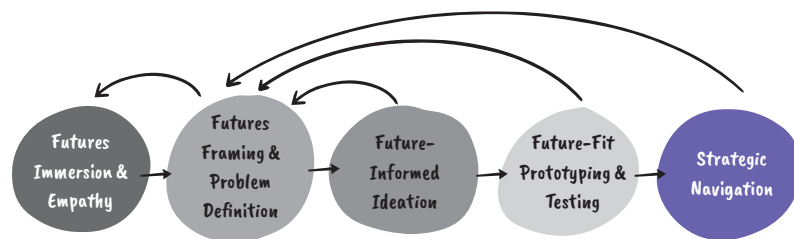
I would like to...

...create a clear and actionable path from a desired future back to the present day.



What you can do with the tool:

- Translate a long-term vision into a concrete sequence of achievable steps and milestones.
- Identify the critical policy changes, technological developments, and social shifts required to achieve a preferable future.
- Create a more strategic and proactive plan, as opposed to a reactive one that simply extends current trends.
- Build consensus and alignment within a team by creating a shared and logical map of the path forward.
- Identify potential roadblocks and critical decision points long before they are reached.



Expert Tips

Make It a Story

Do not just list milestones as bullet points. Weave them together into a compelling narrative. Telling the story of "how we got here" from the perspective of someone in a desired future is a powerful way to make the strategic path more engaging and memorable.

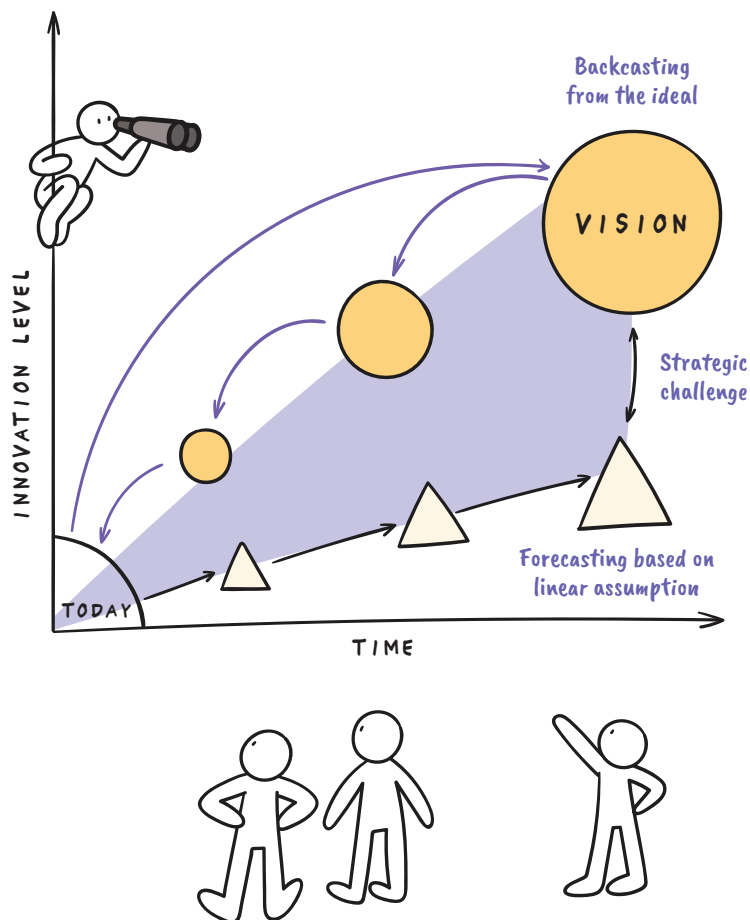
Identify Critical Dependencies

As milestones are mapped backward, pay close attention to dependencies. Does Milestone B require a technology that is only developed in Milestone C? Visualizing these dependencies is crucial for understanding the critical path and potential bottlenecks in a strategy.

Combine with Forecasting

Backcasting is most powerful when combined with traditional forecasting. Once a "backcast" path from the future has been created, compare it with a "prediction" path from the present. The gap between these two pathways is the strategic challenge; it highlights where innovation and action are needed to bend the curve of the present toward the preferred future.

How this tool is applied:



Backcasting is a strategic planning method that reverses the traditional forecasting process. Instead of starting from today and moving forward, you begin with a vividly imagined, preferable future and work backward to the present, identifying the necessary steps along the way.

Step 1: Define Your Desired Future

Start with a clear, compelling, and specific vision of a successful future, typically dated 10–30 years from now. This vision should be the “preferable future” identified through tools like the **Vision Cone** (see page 60) or the **Future Headlines** (see page 104) exercise. The more detailed and tangible this future vision is, the more effective the backcasting process will be.

Step 2: Map Major Milestones Backward in Time

Working backward from your future vision, identify the major milestones that would have needed to happen just before that future could be realized. Then, ask what would have needed to happen just before that milestone, and so on, until you arrive back at the present day.

Step 3: Detail the Necessary Actions and Policies

For each milestone on your timeline, detail the specific actions, policies, technological breakthroughs, or social shifts that would be required to achieve it. This step turns the high-level roadmap into a more granular action plan.

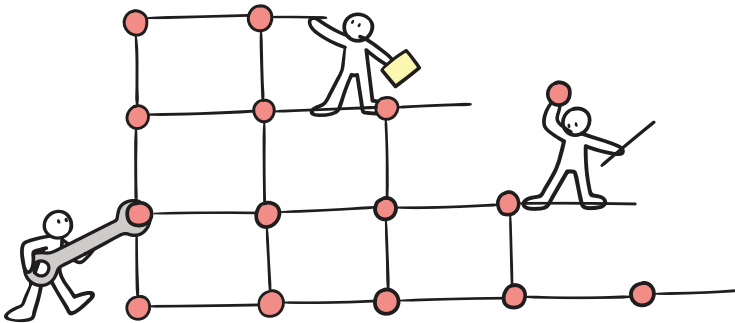


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www.design-humanity.com/en/backcasting

Future-Ready Roadmapping

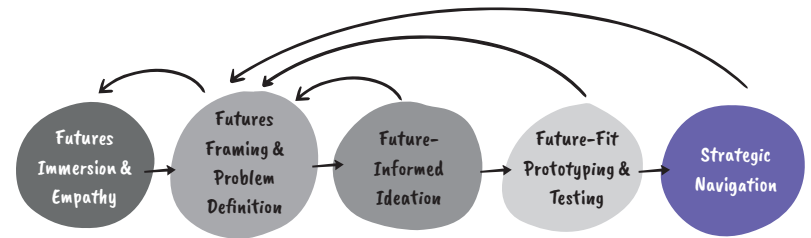
I would like to...

...create a dynamic and adaptive strategic roadmap that can navigate uncertainty and evolve as the future unfolds.



What you can do with the tool:

- Move beyond a rigid, linear plan to a more flexible and resilient strategic framework.
- Clearly communicate a strategic path forward while still accounting for future uncertainty.
- Proactively identify key decision points and “signpost indicators” to monitor over time.
- Empower a team to make adaptive decisions without having to constantly rewrite the entire strategy.
- Build a strategy that is not brittle but is designed to learn and evolve.



Expert Tips

Focus on “No-Regret” Moves

When analyzing a roadmap, identify the “no-regret” actions. These are the strategic moves that are valuable and make sense across all of the most plausible future scenarios. These should be the highest priority for immediate investment and action.

Distinguish Between an “Action” and a “Decision”

A powerful roadmap clearly distinguishes between actions to be taken now and decisions that must be made later. Do not aim to have every future decision made in advance. Instead, identify when a key choice must be made.

Make the Roadmap a Visual Artifact

Create a large, visual representation of the roadmap and display it in a shared team space. This turns the strategy into a living document that can be easily referenced, discussed, and updated. A visual map facilitates dynamic conversations far more effectively than a dense text document.

How this tool is applied:

A Future-Ready Roadmap builds on the insights from **Backcasting** (see **page 114**) to create an actionable, adaptive plan. It acknowledges that while the long-term vision is clear, the specific path to get there may need to change as the future becomes clearer.

Step 1: Define the Core Path

Using the output from the **Backcasting** exercise, lay out the primary sequence of milestones and actions required to reach the desired future. This forms the central trunk of the roadmap.

Step 2: Identify Key Uncertainties and Alternative Paths

For each major phase of the roadmap, identify the most critical uncertainties that could alter the path. For each uncertainty, brainstorm an alternative pathway or a set of adaptive tactics. This builds flexibility directly into the plan.

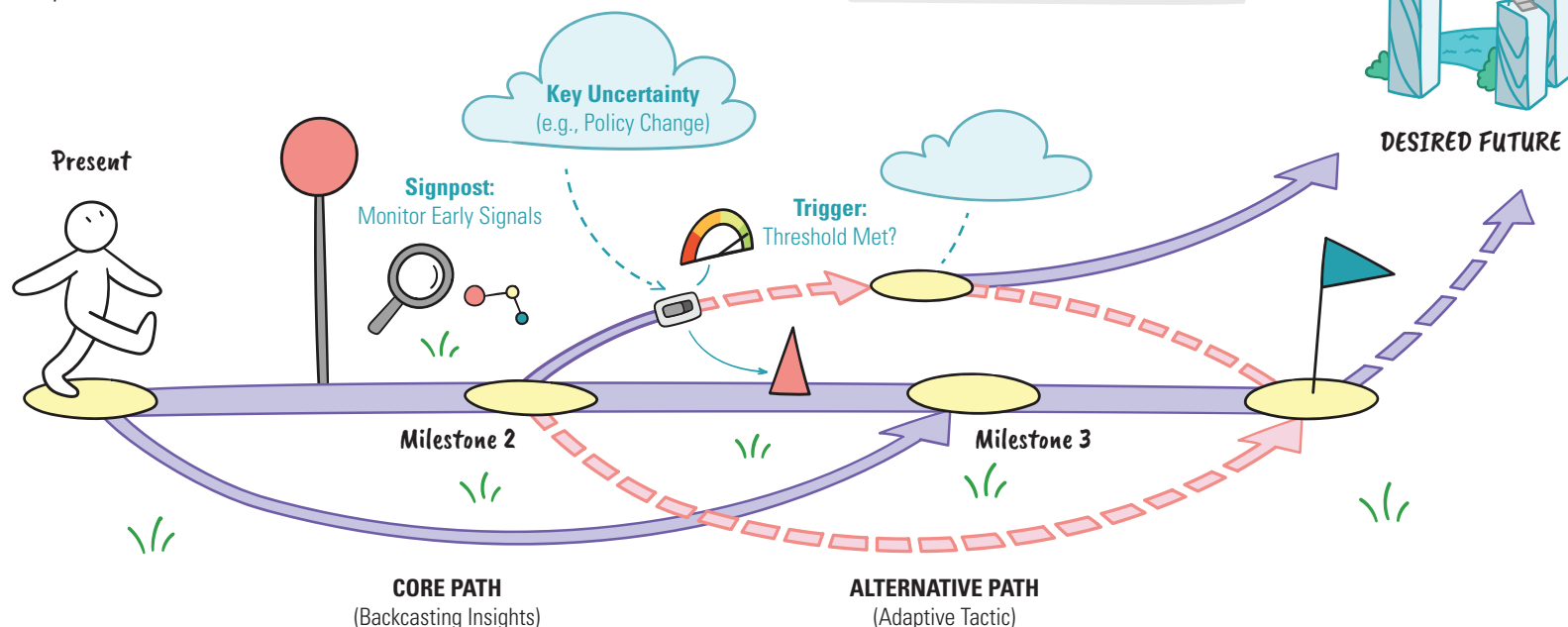
Step 3: Define “Signposts” and “Triggers”

A strategy cannot adapt if it is not clear when to change course. For each uncertainty, define:

- **Signposts:** What early signals or data points will be monitored to see how the future is actually unfolding (e.g., a specific policy change, a new technology reaching a certain price point)?
- **Triggers:** At what specific threshold will a signpost “trigger” a decision (e.g., “If consumer adoption of X reaches 20%, the team will activate Pathway B”)?

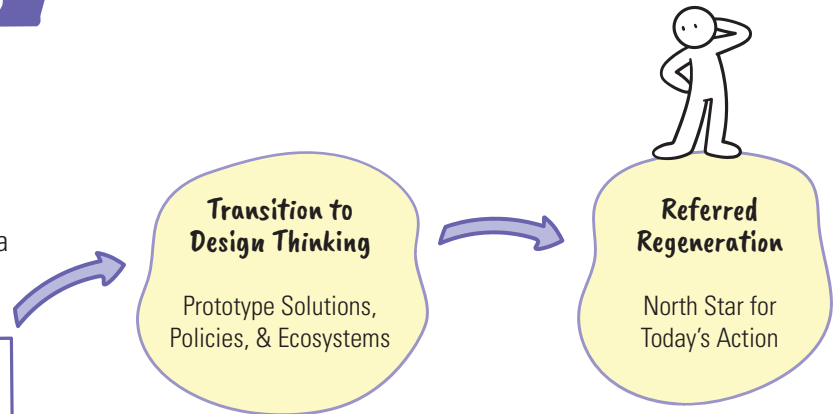
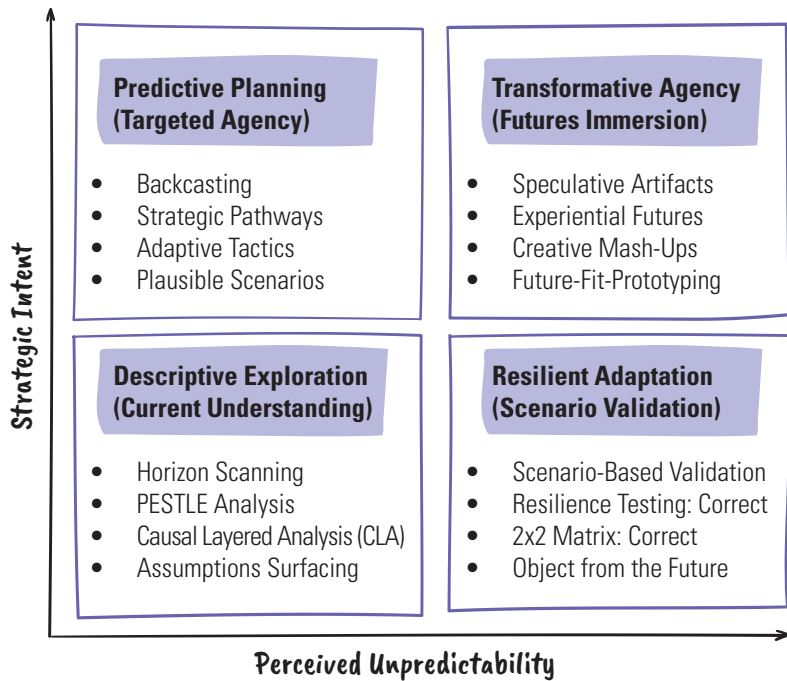


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www.design-humanity.com/en/future-ready-roadmapping



Extension: Operationalizing the Roadmap

To move from speculative foresight to tangible impact, we must operationalize our findings. The **Futures Thinking Strategic Grid** acts as a final filter, mapping our tools against specific strategic intents and levels of unpredictability. This framework ensures that every chosen method strengthens our roadmap, prepares us to transition seamlessly into the iterative prototyping of design thinking, and makes the preferable future a tangible, actionable reality today.



Expert Tips for Transitioning to Design Thinking

Avoid the Prediction Trap

Focus on building agency rather than aiming for a fixed forecast. This capacity allows an organization to invent its future instead of merely reacting to trends.

Prototype the System

Treat the strategic roadmap as a hypothesis. Use Experiential Scenarios to test governance structures, policies, and business models before full deployment.

Identify No-Regret Moves

Prioritize strategic actions that provide value regardless of which future scenario unfolds. Examples include investing in foundational soil health monitoring or developing farmer-centric platforms.



To the Point!

Futures thinking is a strategic discipline that moves beyond a single, predicted future to explore a full spectrum of possibilities, providing the essential long-term context for any meaningful design intervention.

The practice is not about predicting the future but about making more resilient decisions in the present by stress-testing strategies against multiple plausible scenarios and identifying a clear “preferable future” to guide action.

A core function of this work is to systematically challenge our own mental models, using tools like the Ladder of Inference and Causal Layered Analysis to uncover the hidden biases and deep-seated myths that shape our perception of what is possible.

The goal is to translate weak signals and emerging trends into powerful insights, informing a strategic direction that allows us to move beyond reacting to change and begin to proactively shape a more desirable, win-win-win world.