



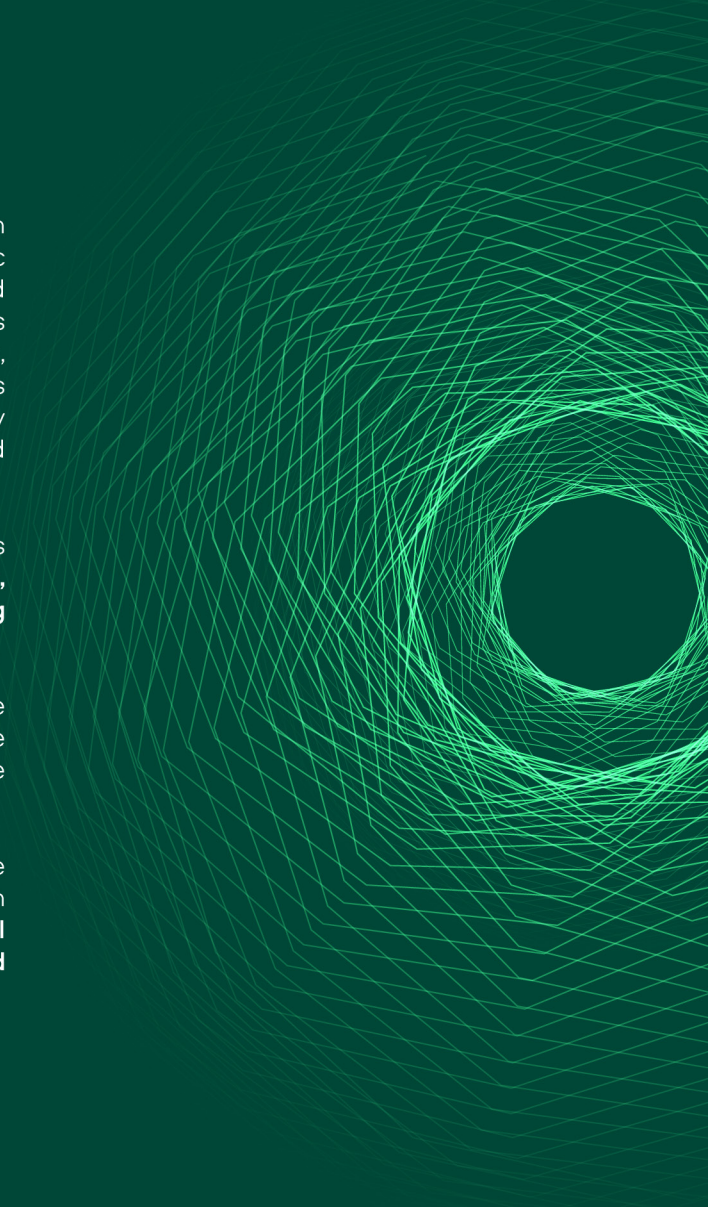
# GOVERNING UNDER UNCERTAINTY

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Edition 2



Foresight for Resilient  
National Transformation



— National visions are not tested in times of stability, but in moments of disruption. Long-term ambitions such as economic diversification, stronger institutions, resilient infrastructure, and improved quality of life increasingly unfold within environments shaped by economic volatility, technological acceleration, geopolitical uncertainty, and evolving societal pressures. As discussed in the previous article, the challenge today is not only designing ambitious visions, but sustaining their execution amid constant change.

In this context, resilience must be embedded into how institutions anticipate risks, **test assumptions, allocate resources, coordinate across sectors, and adapt course without losing strategic direction.**

This is where foresight emerges as a resilience engine. Its value lies in strengthening institutional readiness for multiple possible futures and enabling governments to adapt proactively before disruption forces reactive responses.

When embedded effectively, foresight helps governments move beyond static planning toward more resilient execution models—ones capable of **protecting long-term national objectives while continuously adapting policies, programs, and investments as new risks and opportunities emerge.**

## I. | Foresight as a Resilience Engine

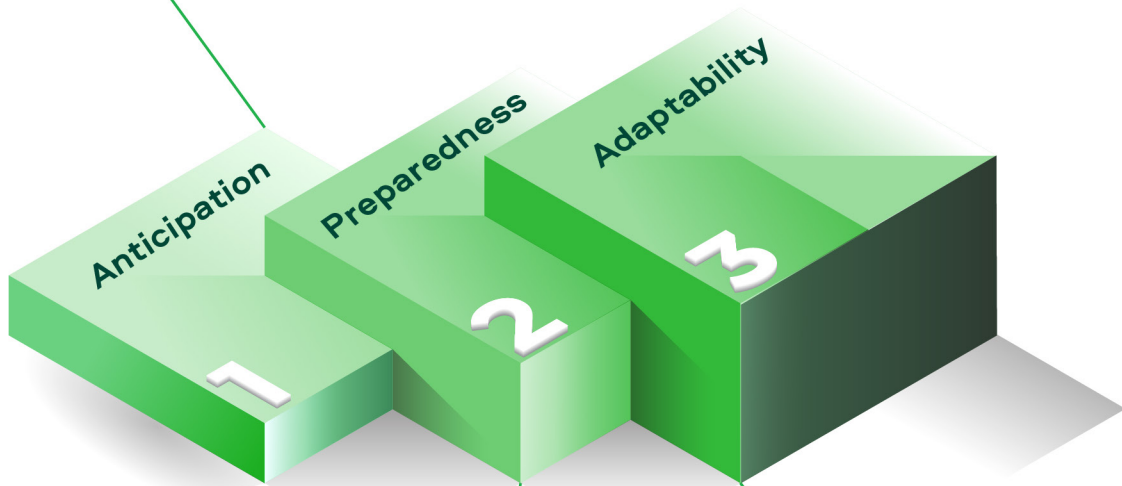
### Building Anticipation, Preparedness, and Adaptability

Resilience in national governance is often understood as the ability to **absorb shocks and return to a prior state.** A more operational definition for resilience in national governance is the ability to maintain **strategic continuity through changing conditions.** It is the capacity to sustain long-term objectives despite the inevitable divergence between the environment that was planned for and the one that actually unfolds. In this sense, **resilience becomes an active governance capability, with strategic foresight as its primary enabler.**

## A. Foresight Capabilities for Resilient Governance

Foresight strengthens resilience across **three interconnected dimensions**:

The ability to **detect early signals of change** and integrate them into decision-making before they fully materialize. The distinction between weak signals and established trends is critical—by the time a trend is widely recognized, the window for proactive response has already narrowed. Institutions with structured horizon scanning capabilities are **better positioned to identify strategically relevant shifts earlier**, expanding both the range and quality of response options. In the UAE, future foresight has been embedded across the government ecosystem through future-readiness, executive education, and policy-support initiatives, with entities such as the **Dubai Future Foundation** playing a visible role in applying horizon scanning, weak-signal analysis, and foresight-led planning.



The capacity to design strategies that are robust across multiple possible futures, rather than optimized for a single expected one. The **Dutch Ministry of Defense**, in developing *Defensievisie 2035*, illustrates this clearly: it used scenario planning to derive the capabilities and preparedness different futures might require. The process helped surface needs such as more **flexible performance**, stronger **intelligence and information capabilities**, and greater specialization within EU and NATO partnerships. In this case, the real value of scenario planning lies in building adaptive thinking as an institutional capability, not in forecasting accuracy.

The ability to **adjust strategy, reallocate resources, and redesign programs** as conditions evolve, with speed and confidence grounded in prior analysis. It is fundamentally different from reactivity. Reactive systems respond after disruption, often under time pressure and uncertainty; adaptive systems respond early and deliberately, guided by pre-analyzed scenarios and defined response pathways. This capability is reinforced through **anticipatory innovation governance**—embedding foresight directly into the operating rhythms of government so that insights from anticipation and preparedness are linked to decision points.

Together, these dimensions form a critical complement to traditional planning. They do not replace execution discipline but strengthen it.



## B. Foresight Implementation Failure - Closing the Impact Gap

In practice, foresight initiatives fail less because of weak analysis and more because of institutional design gaps. The central challenge is often the disconnect between generating foresight insights and embedding them into decision-making.



**Treating foresight as a one-off output** rather than a continuous capability, resulting in insights that quickly lose relevance.



**Disconnecting foresight from decision-making**, where analysis does not reach the right stakeholders at the right time or in the right form.



**Overcomplicating methodologies**, making them too slow or resource-intensive for real-world governance contexts.



**Lack of leadership ownership**, where foresight is endorsed in principle but not actively championed in practice.



**Confusing foresight with forecasting**, evaluating it based on predictive accuracy rather than its ability to strengthen preparedness.

Sweden's national assessment of its own foresight limitations offers a sharp illustration of how these failure modes compound when left unaddressed. Despite a growing awareness of strategic foresight across its public and private sectors.



Sweden's evaluation of its institutional position concludes that foresight efforts frequently become engaging stories about the future with low strategic impact because the demand for foresight is not systematically embedded in strategic processes, and the connection between analytical output and governance decision remains discretionary rather than structural.

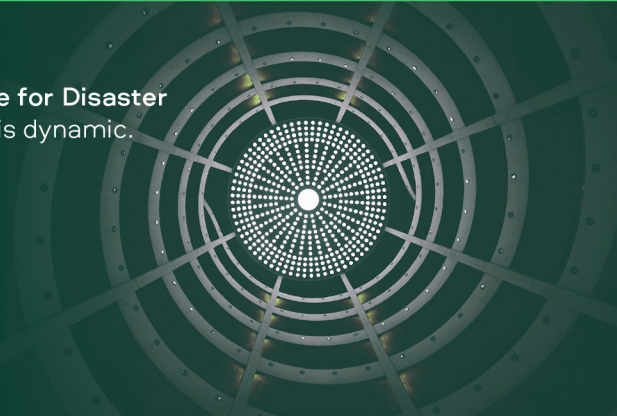
## C. Translating Foresight into Value

One of the persistent challenges in building the case for strategic foresight is that its value is inherently difficult to measure. It is often expressed through what does not happen—a crisis avoided, a misallocation prevented, a program adapted before its assumptions failed. As a result, foresight is exposed to a familiar institutional bias: **the tendency to prioritize visible response over invisible prevention.**



Evidence from the **United Nations Office for Disaster Risk Reduction** illustrates the scale of this dynamic.

“ Every \$1 invested in resilient infrastructure can generate up to \$4 in avoided losses.



Foresight therefore requires a **different measurement lens** that makes its indirect value visible.



**Financial value**

Foresight helps governments avoid large-scale capital misallocation by stress-testing investments before resources are committed and improving the timing of intervention, making early action on emerging risks more cost-effective than delayed response.



**Operational value**

It strengthens execution by making programs more resilient to disruption, improving workforce alignment with future demand, and helping departments maintain service continuity through earlier detection and preparation. Latvia’s national education and skills strategy, for example, used strategic foresight to connect education decisions more explicitly to future labor-market conditions and cross-sector implications.



**Strategic value**

Foresight helps transformation programs stay directionally coherent under changing conditions by testing assumptions, supporting better resource-allocation decisions, and enabling adaptation without losing strategic intent.



**Institutional value**

Over time, foresight builds more future-literate governments by embedding forward-looking thinking into how institutions learn, decide, and govern, rather than confining it to isolated exercises.

## II. | From Insight to Institution

### Embedding Foresight in Government Operating Models

The value of foresight is rarely questioned. Governments recognize that improving visibility into the future enhances decision quality. The challenge lies in translating that recognition into an embedded, operational capability—one that continuously produces decision-relevant intelligence and is directly connected to how strategy is formed and resources are allocated.

Where foresight has been successfully institutionalized, three factors consistently determine its effectiveness: **organizational positioning, operational tools, and integration into decision-making processes.**

#### A. Organizational Positioning: Authority, Access, and Influence

The placement of a foresight function is a **strategic choice**—it shapes its authority, its access to leadership, and its ability to influence decisions that matter.



**CENTRE FOR STRATEGIC FUTURES**  
Strategy Group, Prime Minister's Office

Singapore's **Centre for Strategic Futures**, located within the Prime Minister's Office, is a leading example of effective positioning. Its proximity to the center of government provides access to decision-makers and enables coordination of foresight across the broader system.



**European Commission**

The **European Commission's Strategic Foresight Report** is a leading example of this integration—designed not as a standalone publication, but as a structured input into annual work programs and multi-year budget frameworks. The underlying principle is clear: **foresight must be timed and structured around decision processes**, not produced in isolation.



## B. Operational Tools: From Signals to Strategic Intelligence

Effective foresight systems rely on a set of integrated tools, whose value lies in how they function together as a continuous intelligence process:

### Horizon Scanning

The structured, ongoing monitoring of the external environment to identify early signals of change. It reduces the chance that important change remains invisible until it becomes expensive.

Institutions such as the **UK Government Office for Science** demonstrate how systematic scanning can create meaningful lead time for strategic response.



Government  
Office for Science

### Scenario Planning

Translating signals into structured narratives of how the future may evolve. Effective scenario planning is less about prediction and more about challenging institutions to consider futures that may otherwise be dismissed as unlikely or premature.



#### Policy Horizons Canada

emphasizes scenarios not as predictions, but as tools that expand the range of futures institutions and decision-makers are prepared to navigate.

### Back Casting

Working backward from a defined future state to identify the **decisions, sequencing, and milestones** required to reach it under different conditions. In practice, it is one of the most useful methods for connecting long-range ambition to present-day action without treating the path from one to the other as fixed. That is especially valuable for **transformation programs** that need to preserve direction while retaining flexibility in route and timing.

### Stress Testing

Applying scenarios to existing strategies and investments to assess **where they remain robust and where they require adjustment**. In advanced practice, stress testing is used to evaluate major commitments before they are locked in.

In **Slovakia's use of foresight to strengthen its National Investment Plan**, scenarios were used not as predictions, but as tools to test whether current priorities, metrics, and sequencing would remain effective under different technological and economic futures.



## C. The Enablement Ecosystem

### From Foresight Unit to Foresight System

A foresight function’s impact depends on the broader ecosystem that enables it to generate credible insight, connect that insight to decision-making, and continuously expand its relevance across government and beyond. In this sense, foresight is not a standalone capability, but the product of an integrated ecosystem. A core component of that ecosystem is the network of stakeholders involved, which can be understood through a three-layer enablement model structured around concentric levels:

Private sector, non-profit actors, and international partners who enrich the system through knowledge, expertise, and innovation.

Ministries, entities, and research centers that interact with, apply, and institutionalize those outputs

Key stakeholders with a direct role in driving foresight, from generating inputs and analysis to producing foresight outputs (e.g., future foresight office, vision realization office)



At the **external level**, the focus shifts from institutionalization to strategic reach, enrichment, and diffusion. This layer includes the private sector, non-profit organizations, and international partnerships, with the objective of strengthening the quality and diversity of foresight outputs while connecting them to global trends and best practices. It also creates space for experimentation and earlier translation of foresight into action, often with greater agility than formal government processes allow. This dimension is critical, as foresight systems weaken when shaped only by internal governmental perspectives. More mature systems therefore build external knowledge networks, communities of practice, and cross-sector collaborations to broaden the range of signals, perspectives, and challenge functions informing decision-making.

At the **government level**, the challenge is not foresight production, but institutional uptake. This layer includes ministries, authorities, and government research centers that engage with foresight outputs, contribute to their development, and apply them within sectoral contexts to support strategic planning and policymaking. Ireland’s experience highlights that foresight creates value only when it is aligned with the institutions it aims to inform, embedded within formal and informal governance structures, and connected to real policy-cycle decision points. At this level, foresight evolves from a specialized activity into an institutional practice, while also being validated through practical sector-level application rather than remaining a high-level trend exercise.

At the **internal level**, the focus is on operational quality and the translation of foresight into decision support. As the core layer of the ecosystem, it drives foresight activities forward while coordinating the process across stakeholders. This layer includes the foresight function itself, with the objective of ensuring high-quality outputs and integrating them into decision-making processes. It is most effective when foresight is treated as a purpose-driven capability rather than a standalone analytical exercise—by assigning clear ownership, identifying producers, users, and beneficiaries, and establishing dedicated coordination mechanisms that enable foresight to generate operational value.

Taken together, these three layers suggest that **the real enablement challenge is not only where foresight sits, but how the layers interact over time.** A foresight system becomes stronger when interaction across the tiers is two-sided and evolving:

When the internal layer not only produces insight but is informed by government demand and external signals.

When the government layer not only institutionalizes use but feeds back sector-specific needs and validation into the system.

When the external layer not only enriches foresight but helps test, challenge, and accelerate its translation into action.

Effective foresight systems therefore require a model that combines flexibility with clear governance and monitoring, while continually addressing practical questions such as how to sustain stakeholder participation, align incentives, and keep the system responsive as conditions change.

“ The implication is that an enablement ecosystem should be designed not as a static stakeholder map, but as an evolving governance architecture for foresight itself.

### III. | The Private Sector Parallel

#### What Decades of Practice Reveal

The private sector has effectively been running this experiment for decades. The relevance of this parallel lies not in identical conditions, but in a shared challenge: **making high-stakes, long-horizon decisions under real uncertainty while maintaining strategic coherence as conditions continuously evolve.**



**Shell** remains the foundational case. In the early 1970s, its **Group Planning division** developed a scenario planning approach that departed from conventional forecasting. Rather than optimizing strategy against a single expected future, Shell constructed **multiple internally coherent scenarios** and used them to **stress-test its strategic choices.** When the **1973 oil crisis** unfolded, the value of this approach became evident: while competitors were forced into reactive responses, Shell’s leadership had already **internalized the possibility and prepared accordingly.**

What made this practice truly valuable was not predictive accuracy, but its impact on how decisions were made. **Scenario planning reshaped leadership mindsets,** broadening their view of what was possible, strengthening their ability to recognize early signals, and enabling responses that were measured and deliberate rather than reactive.

“ A longitudinal corporate foresight study found that firms with stronger foresight capabilities achieved **33% higher profitability and 200% higher market capitalization growth**<sup>2</sup>.

The advantage becomes most pronounced in uncertain environments, where the **cost of rigid assumptions rises sharply** and the premium on adaptive capacity increases.



Firms that institutionalize forward-looking thinking are also better positioned to reposition early when disruption emerges. **Amazon, for example, applies a form of back casting** by writing future press releases and working backward from desired outcomes. The advantage here is not superior prediction, but **stronger institutional processes for engaging with uncertainty.**

The broader lesson is clear: the value of foresight has been demonstrated at scale, across industries and over sustained periods of competitive pressure. **For governments operating in environments of comparable uncertainty—yet with significantly higher stakes—the implication is not theoretical, it is an institutional imperative.**

## From Vision to Resilient Execution

In an environment defined by structural uncertainty, the gap between a well-articulated national vision and its successful execution is not bridged by planning sophistication alone but by the institutional capacity to sustain strategic coherence through conditions that no plan can fully anticipate at inception. This is the capability that strategic foresight provides.

International experience points to a clear set of design requirements. For foresight to deliver real value, it must be:

**Positioned at the center of executive decision-making,** not at the margins of analytical functions.

**Operated as a continuous capability,** rather than a periodic output.

**Directly linked to governance processes** through which strategy is shaped, resources are allocated, and programs are governed.

**Resourced and mandated in line with its strategic importance,** not treated as a discretionary investment subject to short-term pressures.

**Genuinely owned by senior leadership,** with consistent and visible engagement in how its insights inform decisions.

Meeting these conditions requires more than technical design. It requires **deliberate institutional commitment**, supported by an enablement ecosystem that connects foresight production, institutional application, and external knowledge networks into a coherent decision-support system. Foresight must be embedded into the core operating architecture of government, rather than commissioned intermittently with the expectation of impact.

The nations that will execute their transformation agendas most effectively will be those that build the institutional capacity to both protect and adapt their visions, ensuring they remain viable under the uncertain and evolving conditions that will define the years ahead.

What makes this imperative more pressing is that future disruptions are unlikely to announce themselves clearly in advance. In that case, where should governments be looking? and what happens when the systems enabling growth become sources of disruption themselves?

### Space Dependency

the global space economy is projected to reach **USD 1.8 trillion by 2035, up from USD 630 billion in 2023**

As communications, navigation, timing, and Earth-observation services become more embedded in logistics, mobility, and infrastructure, a disruption in space-enabled systems would increasingly spill into day-to-day economic operations.

### Compute Access

Global data-center electricity demand could rise to **945 TWh by 2030**, more than doubling from today, with AI as the main driver

Future competitiveness in AI-enabled sectors will depend not only on software and investment, but on access to electricity, grid capacity, cooling infrastructure, and advanced chips.

### Critical Minerals

The top three refining countries' combined share rose from **82% in 2020 to 86% in 2024<sup>3</sup>**

As countries scale batteries, grids, renewables, and advanced industry, dependence on a small number of refining hubs increases exposure to supply disruption, trade restrictions, and price shocks.

## Meet the Contributors

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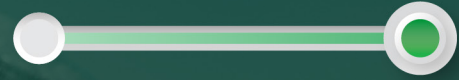
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### Governing Under Uncertainty

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