Good Futures Paradigm Shift

GOOD FUTURES
FROM GOOD INNOVATION

NAVIGATING UNCERTAINTY

Lessons from Nature

Navigating Uncertainty:
Lessons from Nature

January 2026

Contents

Introduction

Foreword

As the title of this report alludes, the certainty of uncertainty looks set to stay, at least for the next decade. Global disruption, energised by Trump's return and the following winds of Farage, Meloni and Weidel, have potentially set in motion a return to the age of nationalist empire building and the politics of might.

For the charity sector, 2025 brought more redundancies, more closures, more restructures and continued financial uncertainty for the majority of the market. It's been tough, internally as well as externally. Teams and leaders are tired and burned out, trying to keep the lights on while facing pressure from funders, government, increasingly polarised public discourse, and internal pushback. Many are holding together fragile systems under conditions they were never designed for.

And yet, despite how 'unprecedented' this moment feels, many of the organisational responses are deeply familiar. The same restructures. The same efficiency drives. The same leadership models, operating assumptions, and cultural habits being asked to stretch further than they ever were designed to.

As we explored in the Radical Hope report, the challenge isn't that we lack people or institutions who are passionate about trying to solve these problems, or who care deeply about the mission spaces they're working in and on. The problem is that we're trying to transform our organisations, our culture and our operating models, based on the same familiar structures and models that we've existed within for the last 40 years.

If we were to step back and look at the challenges we face, and were able to start with a clean slate, would we choose to rebuild what we already have or would we create something radically different?

In ecology, there's a fundamental principle known as **Ecological Succession**. This is the gradual process in which life restructures after disruption. Succession teaches us that scorched earth is not necessarily an endpoint. Pioneer species will stabilise the ground, soil forms, simple plants give way to shrubs, trees, and complex forests. Disruption is the start rather than end. In succession breakdown and renewal are not opposites, they are part of the same cycle.

So for this report we turned to nature and the natural world as our source for inspiration. Not as a romantic ideal, or copy and paste metaphor, but as provocation. Nature is full of systems that know how to absorb pressure, redistribute load, and renew themselves without collapsing or burning out the parts that matter most.

That lens runs through this research. It's used to surface what tends to break inside organisations under sustained pressure, and what conditions allow systems to hold, adapt, and regenerate. We've focused deliberately on the internal mechanics of organisations, not because external factors like mission, purpose and delivery don't matter, but because it's where we hold the most agency to act right now.

'Disruption is the start rather than end.'

We aren't asking you to literally lead like a goose. But we are suggesting that there may be something to learn from systems that already know how to share load, rotate leadership, and pay attention to early signs of strain.

Right now, many charities are operating in something close to a succession zone. Long-standing assumptions have been stripped away, resources are limited and certainty is gone. And while that creates real risk, it also changes what becomes possible: a transition to let go of rules and structures that no longer serve us and to move away from viewing our organisations as fixed and static structures, and towards living organisms that can flex and change.

We hope that the case studies and examples in this research offer some alternate perspectives to leadership, culture and decision making, and give you hope that it's possible to transform your organisation without having to start from scratch.

Daisy O'Reilly-Weinstock
Senior Director of Big Bets

Eef Leurs
Trend Consultant

Methodology

Our Research

This report is grounded in ecological theory and systems thinking, derived from a combination of secondary research and expert interviews. With this foundation, the Good Futures team conducted an exploration of the natural world, to identify organisms and ecosystems that show adaptive and resilient behaviours relevant to navigating uncertainty. We combined our ecological insights and case studies with deep client sector insight, a wealth of signals and sources, and imaginative thinking to unpack the macro trend in detail.

To stop this report turning into a lovely but entirely too intellectual piece of work, and to help translate insight into practical implications, we've used the Good Innovation growth levers as an organising framework for the analysis.

These levers reflect the core choices that shape how charities operate, externally and internally. For this research we've focused on the internal lens; what we at Good Innovation call 'Engine'. How leadership and capability are distributed, how information moves, how decisions get made, how work is coordinated, and how progress is measured and adapted over time.

In the final section of this report, we've tried to bring together the ecological research with the levers to help diagnose what happens under pressure, what signals you can look out for, and how you design your structure and culture differently to weather uncertainty.

This approach allows us to move from observation to action without losing nuance. Rather than asking organisations to copy nature, the levers help identify where similar systemic dynamics are already at play, and where charity leaders have real agency to intervene.

'Rather than asking organisations to copy nature, the levers help identify where similar systemic dynamics are already at play, and where charity leaders have real agency to intervene.'

The Nine Levers of Charity Growth

Navigator

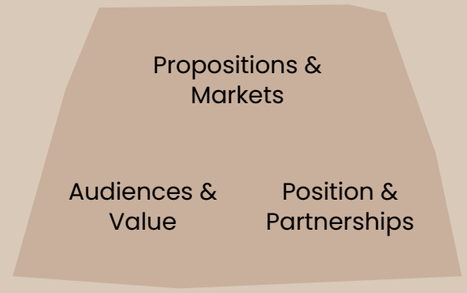
- Aligns on the need for growth and diagnoses the current situation, assessing the potential of the different levers.
- Creates the overall strategy for growth, ordering and planning the different Launchpad and Engine interventions.

Compass

- Defines the summit and the system.
- Clarifies the purpose of the charity.

Launchpad

- Brings the strategy to life in the world.
- Creates and scales the audiences, propositions and partnerships that express the purpose and ambition.
- Succeeds only when the foundations are strong.



Engine

- Builds the foundations that make growth possible.
- Designs and strengthens the ways of working, structures, systems, people and performance that support the strategy.
- Without these, the charity can't deliver on its ambition - the pyramid wobbles.

AI Usage

To uphold the principles of stewardship and reciprocity to nature that sit at the heart of this report, we have taken a mindful approach to AI throughout the work. The heart of the research and writing was carried out by hand by the Good Futures team. We have used AI to enrich, stretch, and challenge our work. Our approach to AI promises to always be human-centric: AI is there to empower us, free up time for creativity, and amplify impact. Foundational research, writing, and, crucially, thinking are never outsourced to AI. The graphic design for this report was entirely done by our graphic designer.

We have used the following tools:

1. Perplexity was used as a research tool, primarily to explore ecological principles and case studies.

2. ChatGPT and Gemini were used as a thinking partner, helping to challenge, stretch, and refine our ideas, but not to generate core research, land the narrative or write up findings. (We, like Emily Dickinson, use dashes as part of punctuation and flow).

Trigger Warning

This report contains images that may make you feel uncomfortable if you have trypo- or entomophobia.

Acknowledging Indigenous Knowledge

Indigenous Knowledge Systems (IKS) form an important part of ecological science and our understanding of the natural world. In this report, we draw on ecological insight that has been lived, practiced and refined by Indigenous peoples for thousands of years, including a number of principles we refer to throughout, such as **stewardship**, **reciprocity**, and **resilience**. Recognition for these knowledge systems is on the rise, with increased calls for IKS to be integrated into sustainability and climate studies, as more and more studies spotlight the **importance of this knowledge for effective natural resource management**. Whilst this is a move in the right direction, we continue to face **challenges around the recognition and mainstreaming of non-Western knowledge forms**, and the categorisation of this wisdom as 'other' (and by extension 'lesser'). Meanwhile, many formal education systems have yet to make space for IKS, allowing Western science to continue to co-opt this knowledge, and **endangering the intellectual heritage of marginalised Indigenous People**. Traditional knowledge is rapidly disappearing, with approximately **20 Indigenous languages becoming extinct each year**. Many of us will likely have come across the learnings of IKS at some point in our lives, without even knowing so.

Whilst we try and accredit these learnings to Indigenous knowledge systems (IKS) where possible, we also recognise that it is not always possible to do so – largely due to the domination of Western knowledge systems and loss of Indigenous history over time. We acknowledge that colonialism and the systemic destruction of intergenerational wisdom, history, and storytelling throughout much of history influences the sources that are available for us to use during the research process for this report, despite efforts to look beyond these.

This report does not attempt to reproduce, translate, or appropriate Indigenous knowledge. Instead, it recognises that many of the principles we refer to sit within Indigenous intellectual traditions. Acknowledging this is a methodological choice, in an attempt to situate organisational learning within a deep-rooted tradition of thinking that continues to shape how resilience is understood and practised today.

'Many of us will likely have come across the learnings of IKS at some point in our lives, without even knowing so.'

Image Source: Climate Promise UNDP

Foundational Philosophies

Introduction

Organisations are shaped by the assumptions they're built on. Many of the dominant organisational models we can observe in the charity sector (and more broadly) have been inherited from previous eras, operating in contexts entirely different to our current realities, and relying on outdated practices. As our conditions change, through uncertainty, complexity, and ongoing disruption, there's a growing need for alternative foundations.

'Organisations are shaped by the assumptions they're built on.'

This is where we turn to nature. Nature has a body of wisdom that it has developed over billions of years of experimentation, failure, and renewal. The last thing we want to do is to turn this knowledge into a superficial set of organisational metaphors you've probably heard before. But this requires a shift in perspective: from organisations as optimisable machines, to organisations as living systems embedded in a wider ecosystem. This section is the conceptual basis for that shift. We introduce the foundational frameworks that sit at the heart of this report, setting the conditions for the practical exploration of the following sections.

Biomimicry and Beyond

BI-O-MIM-IC-RY [From the Greek bios (life) and mimesis (imitation)]

Biomimicry is the discipline of studying nature's designs, processes, and systems to inspire human solutions. This framework has a simple core proposition: after billions of years of evolution, nature has already solved many of the problems that we, as humans, are struggling with. It has developed strategies that are efficient, regenerative, adaptive, and, most importantly, enduring.

Biomimicry positions nature in three roles:

Nature as Model: This asks us to study life's blueprints and adapt them to human systems. For example, a solar cell inspired by a leaf's photosynthesis.

Nature as Measure: This principle casts nature as an ecological standard to judge the 'rightness' of our innovations. What works in nature is inherently sustainable.

Nature as Mentor: Instead of treating the natural world as an endless well of resources or metaphors, this final stance reframes nature as a teacher. A teacher with 3.8 billion years more experience than us in building systems that survive change.

Imagine nature as a library of organisational intelligence. Nature has rules: it runs on the energy available (no more, no less), fitting form to function; recycles everything; rewards cooperation; and banks on diversity. These principles describe organisational resilience as much as they describe ecological success. For the purpose of this report, then, we approach nature as a reference set for how complex systems stay functional amidst unstable conditions.

"It starts from a simple premise: to use the knowledge accumulated over millions of years by nature to achieve ever higher levels of efficiency, respecting the ecosystem and creating wealth, and translating that logic from the ecosystem to the organisational world."

– Gunther A. Pauli, author of *The Blue Economy*

Decentering The Human

Throughout history, humans have sat at the centre of the story. We cast ourselves as the main characters, the heroes of the story. Meanwhile, we have treated nature as a backdrop, resource, or constraint. This is what we call an **anthropocentric worldview**: the assumption that humans are the most important species or members of an ecosystem, often treated as separate and superior to other living organisms.

'Throughout history, humans have sat at the centre of the story.'

That separation is inherently at odds with the biomimetic framework described in the previous section (see: Biomimicry and Beyond). Not only do we propose casting nature in a more central role, we have to recognise that organisations don't operate outside of the living world. We are participants in a larger, interdependent ecosystem. Nature is our **suprasystem**, the environment that all other systems depend on and respond to.

Decentering the human calls for us to step away from the idea that we sit above or outside of the ecosystems we serve. We have to challenge the assumption that human perspectives are the default organising principles of life. This perspective aligns with a worldview long held across **many indigenous knowledge systems**. Humans are a small part of a much larger whole, and the role of any participant in a healthy ecosystem is stewardship. We must tend the balance of the whole, to allow all parts to thrive.

This is where we make a deliberate move to go beyond biomimetic thinking. **An anthropocentric view on this topic** would suggest that we should respect environmental constraints so that humans can continue to thrive. An ecological worldview, instead, would argue that humans are part of nature, so our organisations and systems are too and should behave as nature does. The sustainability crisis, for example, stems from the **gap between these two worldviews**. By remembering that we can't separate ourselves from our suprasystem, we grow our capacity to imagine more positive, reciprocal futures, and become better stewards and ancestors.

'We have to challenge the assumption that human perspectives are the default organising principles of life.'

Economies of Reciprocity

In nature, nothing thrives alone. Every ecosystem is held together by cycles of exchange, with resources moving continually between species in patterns of mutual benefit. Ecologists refer to this as '**mutualism**'; a type of symbiotic relationship where both sides benefit.

You can observe these types of relationships all across the natural world. **Serviceberries ripen long before most plants**, feeding birds and mammals at a critical juncture of the year. They're also dubbed abundance trees, for this reason. In return, those animals disperse the tree's seeds, ensuring their future. **Mycorrhizal fungi supply water and minerals to trees** in exchange for sugars, creating underground economies that sustain entire forests. **Cleaner wrasse remove parasites from larger fish**, gaining food while reducing disease burden in reef communities. We could go on. The common thread across each of these examples is that value circulated. The health of the whole depends on what each member contributes. By contrast, human systems are often set up for accumulation, competition, and extraction. We tend to prioritise what we gain, instead of what we enable.

Reciprocity frames value as something to circulate. It's what we enable, return, and give back to others in our system. Systems built on this philosophy of shared nourishment are more resilient, as they already have the structures for collaboration and resource flow in place.

Image Source: Danita Delimont / Adobe Stock

The Motivations For Change

What are the main forces that push organisations to adapt? Whether change is chosen deliberately to build resilience or imposed by shifting external conditions, we want to understand why change happens, as the underlying motivation shapes how it unfolds and the impact it has. For the purpose of this report, we consider four motivations for change:

Feet To Fire: This is change driven by necessity, due to changes in the external or internal organisational context. Maybe funding has collapsed, regulation has changed, or an organisation has suffered reputational damage. In this case, action is unavoidable because the cost of staying still and stagnating is higher than the cost of changing.

Evolution: This change is introduced before a crisis-point hits, and typically occurs gradually. It consists of sensing a shift in the wider environment and adapting by incrementally pruning and adjusting.

Ego: Change can also stem from ambition, instead of an active threat. An organisation may want to change to maximise the legacy it leaves behind for future generations, or to grow to serve an increased need in the market.

Disruption: An external actor forcing change by disrupting the standard model. This is neither inherently bad, nor inherently good. In this example, change stems from an external force changing the rules of the game.

You'll notice that none of these are passive. There's always an agitant, whether internal or external, at play. So the question arises: when everything is going ok, how (outside of ego) do you find the motivation to change, and how do you take people on that journey of disruption and outside of their comfort zone when things are working?

Foundations: The Conditions For Change

Introduction

There's a difference between getting through a short-term squeeze or income wobble, and living with sustained pressure and uncertainty. When the challenging operating environment refuses to budge, new and unwanted behaviours start to arise. And in the charity sector, they can be particularly energy absorbing. Diaries fill up with meetings, about meetings, about meetings as people back away from decision making and defer to death by committee. Everything (and I mean EVERYTHING) suddenly feels important, so it's impossible to differentiate the critical from the nice to have. And that's understandable as people circle the wagons to protect their teams, their resources, and their space in the mission.

And in this environment, people keep going. Often because they care passionately about the cause. But their reserves are running on empty. There's less room to stop, to reset, to think or, frankly, just get to the end of the to-do list when you're doing three people's jobs. The cracks appear, not overnight, but over weeks and months of just existing. Not because people aren't trying, but because the system has eaten all the slack.

Nature is not immune to this reality. Of continued uncertainty, of limited resources, or needing to make rapid decisions in the face of crisis. But the natural world responds differently. Systems that live with ongoing pressure aren't built to perform at full stretch all the time. They store energy. They notice the small shifts and signals early. They spread the effort and the risk so that no single part or actor has to carry everything. They change shape when needed.

What's striking is that none of this is the response to crisis. These are all conditions that exist constantly inside the ecosystem, in good times and bad. They determine how much strain the system can absorb before it starts to break, and how much room there is to adapt.

This chapter explores how to survive change. How to spot signals early, how to distribute risk, how to reprioritise resources, and how to lead differently. These are behaviours and strategies you can implement before, during and after change, so don't think that just because you're in the middle of the crisis that it's too late to do things differently. Because change is rarely a single moment to respond to, and more likely a condition we all have to learn to live with.

Scarcity Intelligence: The Ecology of Enough

Ongoing polycrisis and increasing volatility have made scarcity feel like a structural condition. Organisations feel forced to respond by squeezing harder: doing more with less, cutting overhead, chasing short-term wins. While that can protect delivery in the short-term, it risks eroding the resilience over time, by eating into reserves of energy, capacity or funding.

In nature, scarcity is a part of life. Species don't tend to operate in a state of constant abundance. Constraint is the default condition for many species. These organisms survive by balancing resource use and adapting fluidly to lean periods. Crucially, they shift their behaviour after stress. Essentially, scarcity is a context which they manage through strategy and sufficiency.

'In nature, scarcity is a part of life.'

Abundance Trees: Preparing for Scarcity

Type: Deciduous & Seasonal Trees (e.g. maples, oaks, spruces)
E.g. Acer Saccharum (Latin)

Location: Temperate forests.

Field Notes: Trees go through cycles of both abundance and scarcity. In spring and summer, resources are typically easier to come by, allowing trees to gather more energy than they have an immediate need for. The resulting surplus is converted into starch and sugars, which are stored in the roots of the trunk. The surplus carries them through the colder months of autumn and winter, when conditions become less favourable for these plants. However, building clever reserves isn't the only way these trees adapt to scarcity. They also have a type of **environmental 'memory.'** After a drought or similar crisis, they'll adjust their growth pattern to produce fewer new leaves, while expanding their root system for future resilience. The following season, they'll delay growth to avoid overexertion and allow for recovery.

Observations: These trees build resilience by planning for slow periods and redesigning after stress, resisting the pressure to 'just keep growing'. After stress, they do less above ground and more below it, strengthening the system before resuming expansion. In volatile conditions, survival depends less on maintaining output and more on knowing when to pause, consolidate, and redesign, trading short-term productivity for improved long-term resistance to uncertainty.

The Living Model

In sustained scarcity conditions, it may be tempting to focus purely on efficiency and doing more with less. However, this continued focus on efficiency above-all has a long-term impact on future organisational capacity. Instead of feeling boxed-in by scarcity thinking, we can adopt a 'sufficiency' mindset, similar to the ones demonstrated by our natural case study. In practice, a sufficiency mindset includes building and protecting reserves, especially ones that aren't financial. Emotional and relational reserves are just as important in times of crisis.

'In sustained scarcity conditions, it may be tempting to focus purely on efficiency'

A sufficiency mindset also acknowledges the limits of your capacity and creates clear cycles: times for growth, consolidation, and reflection. These moments of reflection are just as important as moments of growth, especially in moments of scarcity. It's these intentional pauses that allow us to learn from the impacts of sustained uncertainty and adapt to become more resilient.

Organisational Implications

Primary Lever:

Leadership, People & Capability

Secondary Lever:

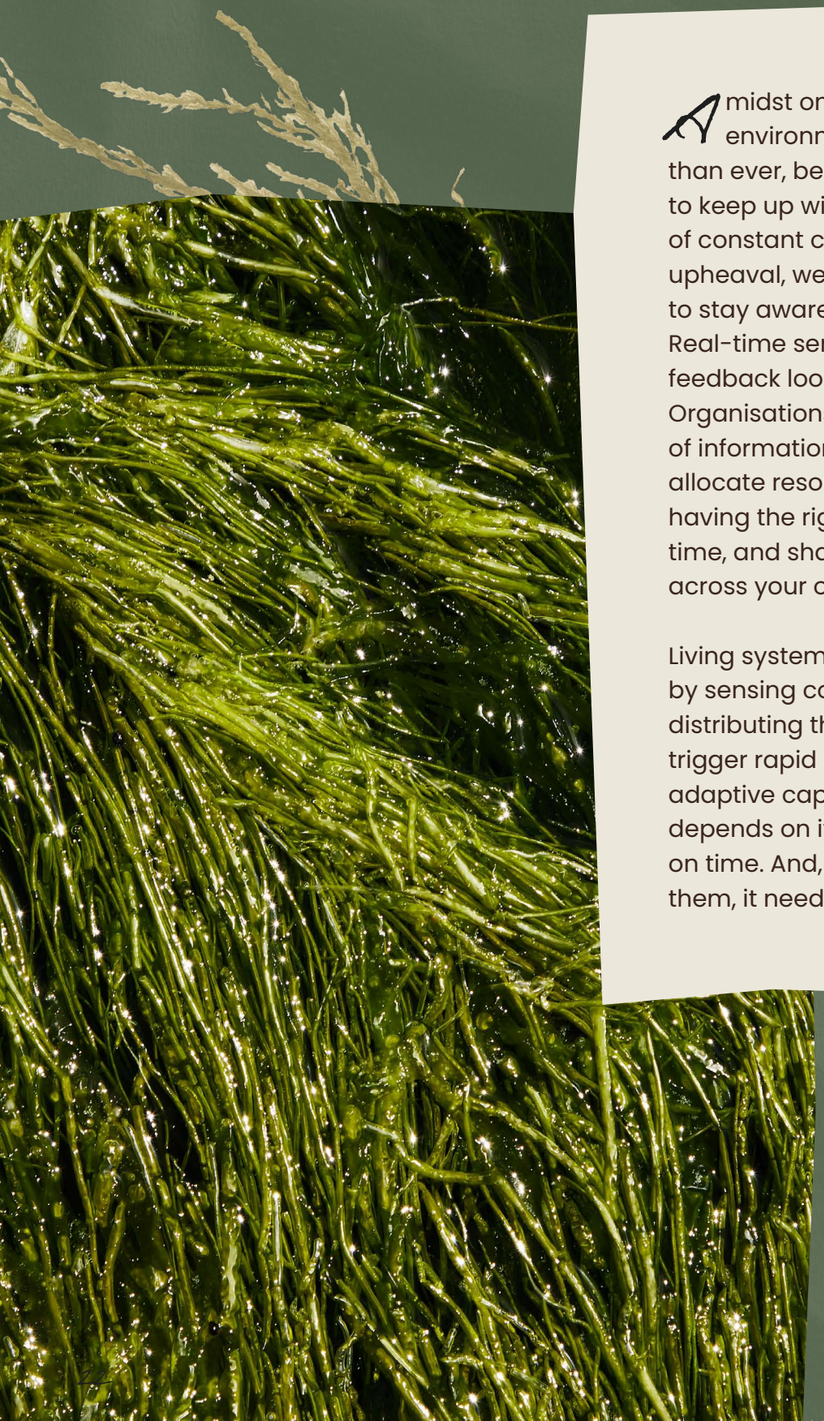
Performance, Prioritisation & Adaptation

Signals: Reserves. Capacity. Prioritisation.

In sustained uncertainty, organisational resilience depends less on maintaining output and more on how capacity is protected, paced, and replenished over time. Scarcity becomes a question of prioritisation and design, shaping which forms of effort are sustained and which are gradually run down.

GOOD FUTURES
FROM GOOD INNOVATION

Resource Management: What The System Knows



Amidst ongoing polycrisis, the external environment of today is shifting faster than ever, becoming increasingly difficult to keep up with and track. In this world of constant change, uncertainty, and upheaval, we need constant monitoring to stay aware of our surroundings. Real-time sensing, live data, and rapid feedback loops sit at the core of this. Organisations depend on ongoing streams of information to adapt, respond, and allocate resources wisely. It's all about having the right information at the right time, and sharing it with the right people across your organisation.

Living systems in nature stay viable by sensing continuous changes and distributing those signals in ways that trigger rapid and effective adjustment. The adaptive capacity of any given organism depends on its ability to spot weak signals on time. And, of course, once it has spotted them, it needs the ability to react quickly.

Algae: Early Warning Sensors

Type: Microscopic Aquatic Organisms
Algae (Latin)

Location: Freshwater and marine systems worldwide.

Field Notes: Algae may be tiny, but they're one of nature's first responders to change. They react to environmental change faster than almost any other species, mainly due to their short life-cycles. For example, when water quality shifts (maybe it becomes polluted, or temperatures rise), **algae respond within hours or days**. Depending on the stimulus, algae populations will boom or crash or they may even change colour. Because of this, they're sometimes referred to as indicator organisms. What algae do now typically predicts what will happen to the whole ecosystem in the future.

Observations: Algae act as early indicators of system stress, responding quickly to changes that may take longer to surface elsewhere. Paying attention to these small shifts allows systems to adapt early, reducing the risk of more severe disruption later on.

Slime Mould: Making the Most of Little

Type: Acellular Slime Mould
Physarum polycephalum (Latin)

Location: Damp forest floors, rotting logs, shaded soil.

Field Notes: Slime mould is one of nature's most surprising problem-solvers. Despite being a single cell organism (so, no brain, no nervous system, no central control), it behaves like a mini logistics network in the wild. If you placed slime mould in an unfamiliar environment, it would begin to extend thin, exploratory tendrils in multiple directions, testing the landscape for where food or positive conditions can be found. The instant it finds something useful for survival, it withdraws its tendrils from paths that aren't working and begins to reinforce the ones that are. In fact, scientists have shown that when placed in a maze, slime mould will always **find the shortest or most efficient route towards food**, pulling back from dead ends as quickly as possible. It continuously reallocates its limited energy to the best option. Essentially, the organism survives through constant, low-cost sensing combined with incremental course-correction. It explores widely, learns quickly, and adjusts constantly in order to make the most of its minimal resources.

Observations: Slime mould shows that effective systems do not rely on abundance. With minimal resources, it explores, senses, and adjusts continuously, redirecting effort toward what works and away from what doesn't.

The Living Model

Effective resource management in times of crisis relies on continuous sensing and micro-adaptations in response. Instead of relying on annual evaluations, which are often too slow, or siloed databases, which prevent information from flowing between relevant parties, we need to create continuous feedback systems.

The first step is choosing the signals you want to track: your algae, the bits that change when the system is under strain. As it stands, too many of the KPIs we track are lagging indicators (e.g. financial outcomes). Of course, these are important to track for holistic understanding of organisational health and performance, but they don't have the capacity to function as early warning bells. 'Early' indicators, instead, might look more like staff strain, burnout levels, or even cross-team communication. What are your early indicators for system health, and which KPIs can you attach to these?

Crucially, these signals (and the information they convey) have to flow throughout your organisation. This data means nothing without interpretation, communication, and subsequent action. You shouldn't be collecting data for the sake of data, and letting it turn into background noise that sits in a spreadsheet somewhere. You want a culture where weak signals are surfaced and communicated clearly and frequently, so that the right people know how and when to react. And this data can't sit, monopolised, in a central repository.

Information hoarding delays decision making across distributed networks.

The signals are the bedrock for small, routine course-correction. But it's the subsequent micro-adjustments that make your early warning systems worth investing in. The benefit of continuous monitoring is that you're able to keep your finger on the pulse and adapt in real time, through small, incremental changes, rather than a disruptive change process when things have already gone wrong.

Organisational Implications

Primary Lever:

Systems, Infrastructure & Technology

Secondary Lever:

Performance, Prioritisation & Adaptation

Signals: Data flows. Early indicators. Feedback loops.

In volatile conditions, organisational resilience depends on how quickly weak signals are noticed, shared, and acted on. Systems that surface early indicators and support small, ongoing adjustments are better able to adapt than those that rely on delayed or centralised information.

Built To Survive: Mycelial Thinking

The word 'resilience' actually has its roots in ecology. It stems from the Latin resilire, meaning to "bounce back." Initially, it was **an ecological term to describe the ability of ecosystems to absorb external forces**, before it was adapted into organisational thinking. When applied to organisations, then, resilience refers specifically to an organisation's capacity to cope with and recover from adversity by adjusting and preserving its functions. Flexibility is central to this practice for two key reasons: firstly, flexibility is what allows for micro-adaptation in response to your early warning signals; secondly, flexible and decentralised organisations are more likely to avoid having single points of failure.

Mycelium Networks: Distributed Resilience

Type: Fungal Networks
Mycelium (Latin)

Location: In the soil beneath forests, grasslands, and woodlands.

Field Notes: Mycelium is an unseen infrastructure hidden underneath many ecosystems. If you've ever set foot in a forest, you'll have encountered mycelium (although you may not have realised it). This fungus spreads as a thin web of threads through soil, leaf litter, and decaying wood. One of the (many) things that makes it remarkable is how well it copes with being damaged. If a section of the network is dug up, trampled, dried out, or eaten by a particularly excitable dog on its daily walk, it simply regrows around the missing piece, reconnects elsewhere, and moves on. In fact, even when large sections are destroyed, recovery is fast and the surrounding network usually remains functional. How is this possible? Mycelium doesn't have **a single point holding the system together**.

Observations: Mycelium's resilience stems from being spread out, decentralised, and flexible. It notably doesn't rely on a single point of failure, using its flexibility to rapidly adapt in times of disruption. Where a more rigid network might crack under pressure, mycelium is able to bounce back quickly and carry on as it was.

The Living Model

In times of crisis, it may be tempting to turn towards increasing centralisation and rigidity, with strict guidelines and hierarchical structure. Yet this rigidity is often what risks making organisations fragile. Mycelium networks, in contrast, show how survival comes from structures that can move, redirect, and adjust as and where needed. In a world where conditions change quickly, resilience is about creating a system that can broadly keep its shape whilst constantly making small changes. Investing in a flexible, rapidly adaptable structure is what allows organisations to capitalise on their continuous sensing.

'Mycelium networks show how survival comes from structures that can move, redirect, and adjust as and where needed.'

The other aspect of flexibility that's worth noting is about avoiding single points of failure. Mycelial networks continue to live when one root is trampled because the system has other routes to follow and connect to. Actively invest in creating shared institutional memory and connections, co-owned by multiple stewards within the organisation, in order to create an environment that will survive when one point fails.

Organisational Implications

Primary Lever:

Structure, Decision Making & Governance

Secondary Lever:

Ways of Working

Signals: Decision distribution.
Flexibility.
Operational resilience.

Resilient organisations are shaped less by central control and more by how risk, knowledge, and decision-making are distributed across the system. Structures that avoid single points of failure and allow authority and memory to be shared are better able to adapt and recover when parts of the system are disrupted.

Resilience Through Diversity: A Balanced Biome

A long history of research has linked biodiversity to the stability of ecosystems. Different species have different needs, keeping each other balanced. Different species also respond differently at times of crisis, reducing the likelihood of total system collapse. A similar history of research links cognitive and demographic diversity in human organisations to improved creativity and collective intelligence, due to broader perspectives and insights. The analogy between the natural and human world in this case is fairly straightforward: multiple ways of delivering, thinking, and doing make you less exposed to disruptive events.

The Savanna: Diversity as Stability

Type: Savanna Biome
Zavana (Taino)

Location: East and Southern Africa, parts of Australia, Brazil, India.

Field Notes: Savannas are biomes built on difference. Grasses, shrubs, acacia trees, antelopes, elephants, insects, and more, all coexist in the same space, each with a distinct role to play in the ecosystem. This type of biome is constantly under pressure from crises such as droughts, wildfires, or seasonal floods. How does it survive it all? There is no singular dominant strategy for survival in the savanna. It works because different species take centre-stage at different times. After a fire, fast-growing grasses return first, paving the way for others to follow. In drought, deep-rooted trees maintain shade and moisture to support animals. When shrubs grow too dense, elephants push them back; when grazing animals thin the grass, the shrubs expand again. Diversity is what gives the savanna more options for recovery at any given crisis point.

Observations: Savanna ecosystems show how diversity functions as a form of shock absorption. Different species respond to stress in different ways, allowing the system to redistribute pressure rather than collapse. Risk is spread across the whole, creating in-built redundancy and multiple paths to recovery.

The Three Sisters: Complementary Difference

Type: Corns, Beans, Squash
Selu, Tuya, Iya (Cherokee)

Location: Historically used throughout North America, developed by Indigenous American growers

Field Notes: In indigenous agricultural practices, the Three Sisters (corn, beans, squash) are traditionally grown together. **Each plant fills a different ecological niche that supports the others**. Corn grows tall and provides a natural pole for the beans to climb; beans return nitrogen to the soil enriching it for the plants; and squash sprawls across the ground to shade it, maintain moisture, and avoid weed-growth. This system achieves what monocultural farming can't. The system produces more food in the same space, has healthier soil, and resists pests and drought better than any of the three crops grown alone. The technique's resilience stems from carefully selected and combined differences.

Observations: The Three Sisters demonstrate functional diversity, where resilience emerges from carefully combined differences rather than uniformity. Each component strengthens the others, creating a system that performs better together than any element could alone.

Illustration Source: Treehugger / Lora Antal

The Living Model

Diversity strengthens organisations and ecosystems alike by providing more ways to cope with change. Different perspectives, skills, and approaches reduce exposure to instability by providing multiple routes for adaptation, particularly in volatile conditions. And there's plenty of in-depth research into this phenomenon. For example, **research shows** that more diverse teams show stronger problem-solving capacity and more resilient performance in volatile environments, particularly when collaboration is encouraged rather than siloed. Furthermore, **diversity is associated with higher engagement**, lower turnover, and better well-being as employees feel more able to bring themselves to work.

'Diversity strengthens organisations and ecosystems alike by providing more ways to cope with change.'

Watch out: diversity doesn't automatically improve performance or outcomes. It is not a silver bullet solution. The overall relationship between diversity and performance is **often inconsistent**, unless the conditions of an organisation support diverse thinking, perspectives, and backgrounds. Diversity delivers better outcomes, but only if you're built to use its strengths. Invest in creating inclusive hiring practices, spaces, and culture within your organisation, as well as celebrating differences internally and creating space and psychological safety for dissent.

Organisational Implications

Primary Lever: Ways of Working

Secondary Lever: Leadership, People & Capability

Signals: Collaboration. Skills diversity. Risk spread.

Resilience increases when organisations are designed to make use of difference rather than smooth it out. Systems that recruit for diverse skills, backgrounds and perspectives and build cultures focused on collaboration rather than competition have more options for response and recovery when conditions change, or uncertainty continues.

'Diversity delivers better outcomes, but only if you're built to use its strengths.'

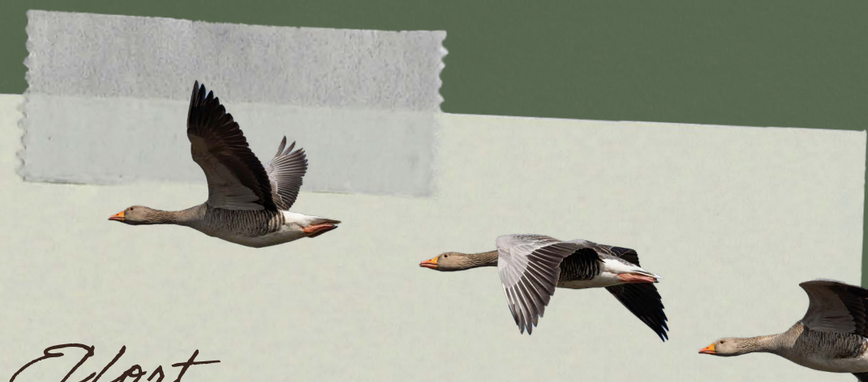
Shared Leadership: Lead Like A Goose

Traditionally hierarchical leadership might offer short-term clarity, but it simultaneously creates dependency and drag. Decisions bottleneck at the top and the organisation's ability to sense and respond to change is limited to the capacity of a few key players. Not only that, the burden of leadership can create isolation and burnout at the top, with limited pathways for support.

The now widely debunked myth of the 'alpha leader', which originated from terminology used in research on captive wolf packs in the mid-20th century, is still used today in society to describe hierarchical leadership. But the **reality of leadership in wild wolf packs** is more akin to a family structure than a fight for a single dominant leader.

Leadership emerges through support, not just strength or aggression. In primates, 'alpha' denotes the one at the top of the social hierarchy, and in this context they are frequently humble, supportive, compassionate, and sympathetic. They uplift those in need and serve as peacekeepers by putting the needs of the group ahead of their own.

So, what's the alternative? **Research finds a positive relationship between shared leadership and team effectiveness**, with stronger effects when the work is complex. Models of shared leadership also emphasise transitional leadership **depending on organisational and external context**. This principle frames leadership as a moving function, rather than a fixed role, as we often see it positioned in nature.



Geese: Rotational Effort

Type: Migratory Bird
Anser (Latin)

Location: Northern Hemisphere flyways (Europe, Asia, North America)

Field Notes: Flying in V-formation, geese share the hard work of leading the flock. The lead position faces the most wind resistance and the highest energy demand. In order to maintain effort, geese rotate the **leadership position periodically**. There is both a supportive aspect to this, as well as individual geese recognising their own capacity and limitations. Studies estimate that this formation can reduce individual energy expenditure by up to **20–30 percent compared to flying alone**. Those in the back honk encouragement; those at the sides regulate spacing and flow. Whilst every position has a specific role in the formation, those who occupy those positions will shift according to the flock's needs.

Observations: Geese show how leadership can rotate without losing direction. By sharing the most demanding roles, the flock maintains momentum while avoiding single points of failure.

The Living Model

Shared leadership is designed to keep an organisation moving without exhausting anyone in any function, and without turning leadership into a single point of failure. This starts with acknowledging principles of stewardship. Senior leaders and management exist to hold mission, ethics, culture, etc. There is, of course, **still a need for someone to define and implement the organisational rules of the game**.

'Shared leadership is designed to keep an organisation moving without exhausting anyone in any function'

This is also where alternative leadership models can give us practical templates to consider, through organisations that have been trialling similar principles for years. Feminist leadership, in particular, is explicit about **shifting how power is distributed and exercised**. The guiding principles of this model frame power around transparent, collective, and collaborative decision-making. It calls for us to actively create space for others to lead, because a burned-out organisation can't deliver safe, effective services.
In goose formations, the hardest role rotates because it has to. Similarly, we can mimic those principles by designing rotation and cover for high-load functions. The same person does not always have to be at the front.

At the same time, we're seeing another model for shared leadership emerge in the sector: co-leadership at the top. These co-CEO approaches are often a deliberate choice to embody equity, and to bring complementary skills and perspectives into leadership teams, to avoid concentrating power in one individual. Of course, this may not be the 'right' answer for every charity, but it underlines a fundamental principle of shared leadership: leadership can be shared without losing clarity, and distributing responsibility can reduce single points of failure and the burden of responsibility.

Shared leadership does not automatically equate to consensus-by-committee at every stage. In geese formations, there's still a lead bird at the front. The difference is that this role changes as conditions and capacity shift. Leadership remains clear, but responsibility is shared, reducing reliance on any single individual and lowering the risk of exhaustion or burnout at the top.

'Leadership can be shared without losing clarity and distributing responsibility can reduce single points of failure and the burden of responsibility.'

Organisational Implications

Primary Lever:

Leadership, People & Capability

Secondary Lever:

Structure, Decision Making & Governance

Signals: Role rotation.
Leadership capacity.
Decision distribution.

Shared leadership changes how responsibility and authority are distributed across an organisation. Systems that allow leadership roles to shift based on capacity and context reduce reliance on a small number of individuals, supporting continuity, resilience, and sustained performance over time.

Case Studies

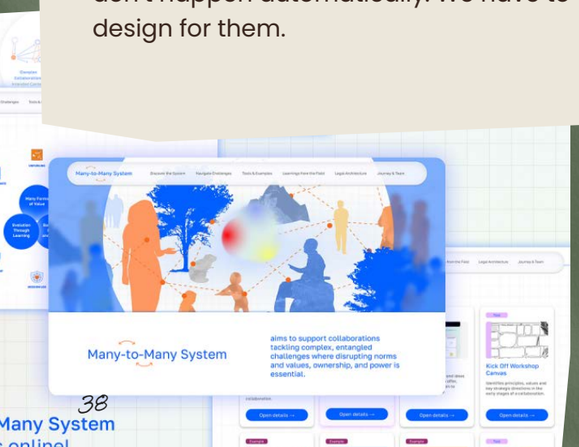
04

Dm

Dark Matter Labs

This climate-focused studio has launched their 'Many-to-Many' system, an online dashboard focused on unlocking the governance, organising, legal, and learning structures that enable the free flow of resources in organisations and complex collaborations. Their goal is to facilitate ways of working that embrace diverse value exchange. The dashboard includes practical tools and frameworks, learnings on legal architecture, real-world examples, and specific guidance for a variety of governance problems.

So What: At the heart of Many-To-Many sits the idea of organisational design built to enable the free flow of resources. Information and support that flows across the organisation to enable better management, transparency, resilience and adaptability. These flows don't happen automatically. We have to design for them.



ADAPT
Analysis Driven Agile Programming Techniques

ADAPT

ADAPT, a partnership between the International Rescue Committee (IRC) and Mercy Corps, recognises that aid and development organisations are limited by linear programming models and bureaucratic constraints. Instead, this work focuses on developing an adaptive management approach that combines analysis, structured flexibility, and iterative improvements in the face of complexity. Techniques they've trialled include decentralising decision-making, localisation, and allowing staff to make regular, incremental improvements and decisions.

So What: ADAPT is a great example of decentralisation to avoid a single point of failure. By building flex into their system (through decentralisation and localisation), they've created a more adaptive organisation capable of quickly responding to change.

HITACHI

Hitachi

Japanese tech company Hitachi has shifted from KPIs focused on income and growth towards tracking one single, unexpected metric: employee happiness. Throughout the day, they'd prompt employees with suggestions for increasing happiness by boosting psychological capital (self-confidence and motivation), psychological safety, and alignment with company objectives. By measuring changes in employee happiness and wellbeing, they were able to improve productivity, sales, and overall organisational health.

So What: Not all KPIs should be financial. There's value in rethinking the data we're tracking more broadly and creatively, in order to reframe what a 'healthy' organisation looks like.

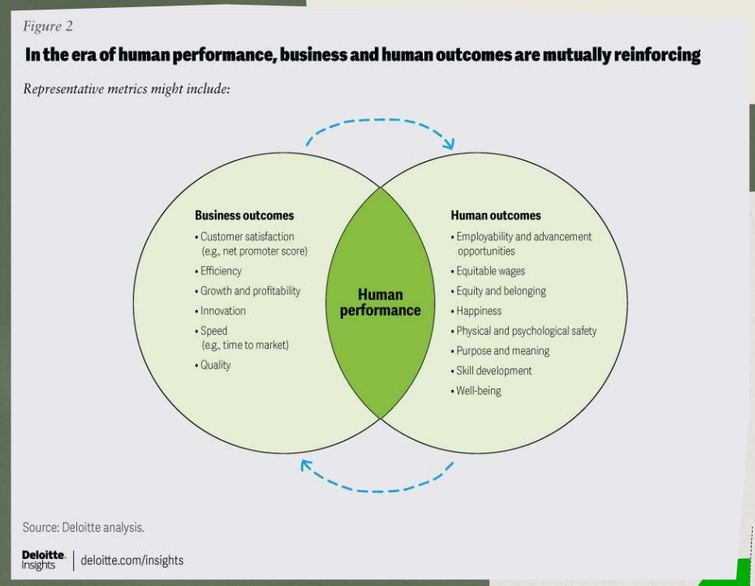


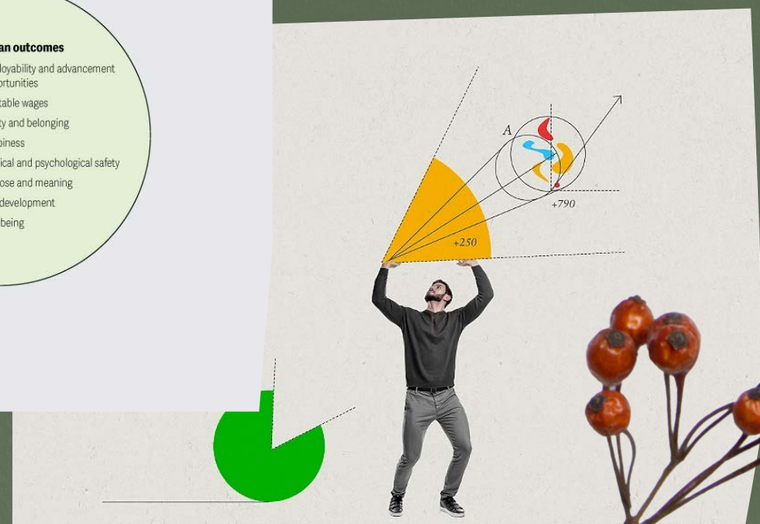
Figure 2

In the era of human performance, business and human outcomes are mutually reinforcing

Representative metrics might include:

Source: Deloitte analysis.

Deloitte Insights | deloitte.com/insights



Case Studies

Médecins Sans Frontières

Médecins Sans Frontières (MSF) runs an Inclusive Innovation programme, designed to support staff at all levels to innovate around the challenges the charity faces. The organisation aims to address systemic issues of exclusion by putting diversity at the centre of innovation opportunities. To action this, they ensure that all staff across various perspectives and experiences are supported through the innovation process with a clear 'Exploratory' and 'Implementation Support' framework that's accessible for all teams.

So What: At the heart of MSF's approach is the idea that diversity drives creativity and innovation. They also recognise that diversity in isolation doesn't achieve this, you have to actively invest in the structures to support diverse thinking and give employees the tools to action their ideas.

ActionAid

ActionAid practices feminist leadership principles, as an example of living their mission. As part of their commitment to women's and girls' rights, they recognise and embody **feminist principles in the way they work and how they do things**. In their words: "We are embracing intersectional feminist principles in the workplace not only because they are consistent with what we do, but also because we know that they are vital to the success of our mission." This ethos has led to the creation of ten principles of feminist leadership that they utilise, ranging from sharing power to accountable collaboration.

So What: ActionAid raises a great point about aligning our ways of working with our mission. At a basic level, the sector cares for and supports its service users. We should be embodying those same practices internally.

Greenpeace

In 2022, Greenpeace UK announced that they would be appointing two joint executive directors; the first time the role would be held by two people. From the outset, the organisation's search for a new executive director was focused on creating diversity in the leadership team, explicitly inviting co-leadership applications for this purpose. The current executive directors, Areeba Hamid and Will McCallum, applied together intentionally. Also worth noting: leadership presented a long-list of candidates to employees, each of which submitted a vision statement to be scored by staff for input into the decision-making process.

So What: Leadership doesn't have to be an isolating endeavour. Creating space for shared power allows for better care at management levels, as well as bringing a diversity of perspectives.

The Eden Project

The Eden Project's Creative Leadership and Cultural Change programmes centre nature's teachings on personal and organisational transformation. They describe the development experience as "full of organic, earth-based, nature-inspired processes which focus on connection to self, others, and the planet." The ethos driving this course is the belief that our connection to nature as our ecosystem should sit at the heart of the next iteration of global leadership, especially as global crises compound.

So What: The Eden Project's view on leadership calls back to the idea of decentering the human – nature is our suprasystem, and we should be caring for it in all roles. By creating a programme centered around learning from nature and learning to care for it, it hopes to equip the next generation of leaders with the skills required to be a good steward.

Relations: The Web of Connection

Introduction

When resources shrink and the pressure increases, ‘collaboration’ is frequently the first thing everyone asks for. Collaboration between individuals, between teams, between organisations, to share the load and continue to deliver. Intellectually we know that collaboration and connection are the routes to a healthier and more sustainable operating model, but the gut human reaction at stress points is to guard, to hoard, and to protect. Time, information, resources, and headspace. Reciprocity becomes a ‘nice to have’, and commensalism takes over. Or, in the worst cases, a few people become the go-to fixers and emotional shock absorbers for change, carrying the load so it doesn’t show up on the org chart or statement of accounts (hello Millennial managers. Yes, we are looking at you).

At the same time, we, the charity sector, are sitting on a gold mine of information and data, but starving for shared understanding. Insights sit in decks, spreadsheets, inboxes, or in one person’s head. Organisations duplicate work because they can’t see what others have already tried, failed and learned. And when decisions feel risky or exposing, everything escalates upwards, or gets stuck in committee purgatory.

None of this is a moral failing. It’s what happens when connection isn’t designed into our operating models. Collaboration doesn’t appear because people have good intentions. It appears when the system makes reciprocity possible, when information can move, and when people share enough language to interpret signals in roughly the same way.

Nature deals with this kind of complexity through relationships, not heroics. Bees don’t wait for one brain to decide. They make lots of small evaluations and converge on action through clear thresholds. Squid borrow capability from bacteria and pay for it through care and habitat. The thread running through all of these examples is simple. Resilience isn’t just about what you do, it’s about what you’re connected to and how those connections behave under pressure.

‘Bees don’t wait for one brain to decide.’

This section explores what it takes to build that kind of connection because, In the end, resilience isn’t individual brilliance. It’s whether the web holds when things get heavy.

Symbiotic Partnerships: The Conditions for Collaboration

In ecology, relationships are categorised into **four broad types**:

Mutualism:

Both partners benefit. Cleaner wrasse are a great example, where these small fish 'clean' larger 'client' fish by eating parasites off of them. The wrasse gains food, while the clients become parasite free. Support and value circulates across the parties involved;

Commensalism:

One partner benefits, while the other is unaffected. For example, barnacles attach to whale skin to gain mobility and lower risk from predators. The whale doesn't experience a significant change. In organisational terms, a team might leverage another's platform or data without much cost to the other;

Parasitism:

One partner benefits by harming the other. Mistletoe is a classic example of this. It inserts specialised structures into a host tree, to steal water and nutrients. The mistletoe thrives, but the host tree loses out on resources. In organisations, parasitic relationships might rely on a small number of people to carry out a disproportional amount of cognitive or emotional load to support others;

Competition:

This one speaks for itself. Both organisms compete for the same resource, putting pressure on each other and ultimately harming themselves. For instance, trees compete for light in dense forests by investing in vertical growth and leaf production. Those energy investments reduce the resources available for other functions (e.g. root growth). Competition thus reduces benefit for both parties compared to a scenario without competition, where resources would be allocated differently.

Ultimately, the goal for internal collaboration should be to move all relationships towards mutualism, where the system functions reciprocally, and all parties benefit. **Research shows that reciprocity strengthens the system as a whole**: when people feel trusted and supported, they tend to 'pay it back' through greater effort, creativity, and collaborative behaviour. Collaboration should never be a one way street. The benefits should always circulate.

Hawaiian Bobtail Squid: Borrowing What You Lack

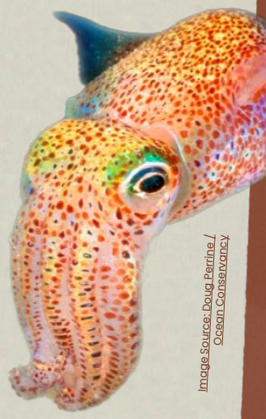


Image Source: Doug Perrine / Ocean Conservancy

Type: Animal-microbe mutualism
Euprymna scolopes (Latin)

Location: Hawaiian coastal waters

Studied Behaviour: Exchange of habitat for function

Field Notes: **The Hawaiian bobtail squid (or Euprymna scolopes) houses the Vibrio fischeri bacteria**, inside a specialised organ. The squid protects and feeds the bacteria, while the bacteria, in turn, produce bioluminescence to help the squid erase its shadow at night for survival. The bobtail squid is born without the capacity to camouflage itself naturally at night, and actively recruits and maintains these bacteria for mutual benefit.

Observations: In this relationship, each partner gains a capability it cannot produce alone, while both invest in sustaining the connection. The partnership works because value flows in both directions and the costs of maintaining the relationship are shared, rather than absorbed by one side.

Image Source: VCG Photo / CGTN

Image Source: Todd Brett Underwater Photography

The Living Model

Internal relationships tend to fall into different patterns of exchange. Mutualistic relationships are built on shared problem-solving and protection, where value flows in both directions. Other patterns carry risks. Commensalism may not cause direct harm, but removes reciprocity. Parasitism risks treating staff as bottomless wells; and competition, especially internally, leads to a decline in efficiency and resource-management. Support is something that should circulate, with knowledge, care, and practical help moving through the organisation depending on the context. Whilst reciprocal benefit might not always be immediately obvious, the goal is to create the knowledge that it will always, ultimately come back around. No one wants to feel as if they're being taken for granted, or taken advantage of. A lack of reciprocal or collaborative culture ultimately leads to employees withdrawing their effort or burning out.

'Mutualistic relationships are built on shared problem-solving and protection, where value flows in both directions.'

So, how do we move towards mutualism? Value exchange has to be an explicit part of the culture. Mutualistic partners in nature survive because each partner benefits, and the contributions of both are clearly visible and tangible. We need to create a similar understanding of where and how staff and teams can create value for each other, and explicitly recognise the flows of support, knowledge, labour, and capability that already exist. Crucially, we also need guardrails that stop the flow of value from slipping into parasitic or extractive patterns. Balance, stewardship, rotational care, and transparency are all factors which help regulate a reciprocal system.

Organisational Implications

Primary Lever:

Ways of Working

Secondary Lever:

Leadership, People & Capability

Signals: Reciprocity.
Value exchange.
Collaboration.

Collaborative systems are shaped by how value and effort circulate across the organisation. Relationships that distribute benefit and load more evenly are more sustainable over time, while extractive or one-sided dynamics tend to concentrate pressure and erode trust, capacity, and collaboration.

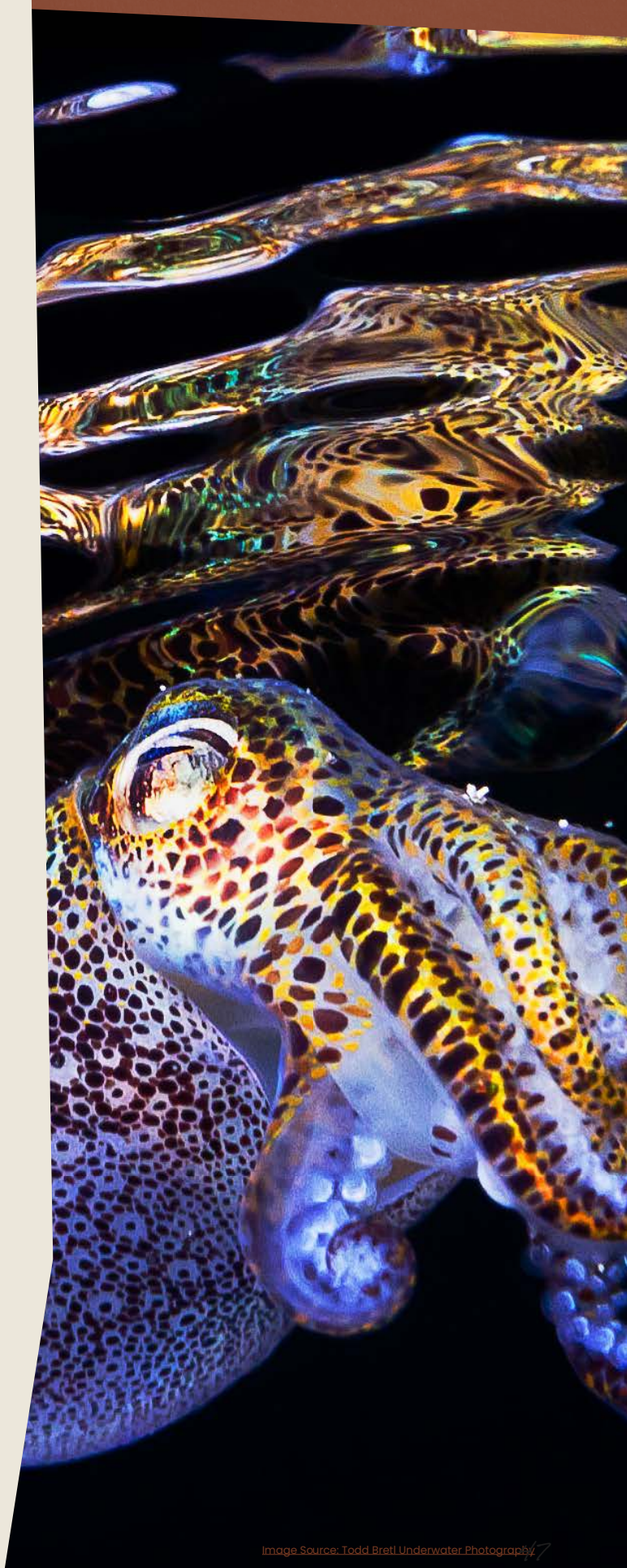


Image Source: Todd Brett Underwater Photography

Data Sharing: The Wood Wide Web

Data – tracking it, making meaning of it, and acting in response to it – is central to navigating the world in increasingly unstable times. It's how we understand the changing environment we operate in. The real challenge is turning the data you collect into something tangible, driving insight and purpose. Data without understanding is just noise. Effective data relies on purposeful collection, robust systems to keep track of data, and systems for translating data into meaningful action. It also relies on data flowing across to people who need it: data designed to move across organisations, or even across the sector.

Unfortunately, data is often trapped or hoarded, viewed as a proprietary asset to be guarded, ending up fragmented or siloed. Learnings stay isolated in individuals or teams, driving fragility when those teams or staff leave, and causing a duplication of effort. Insights are bogarted to deliver a competitive advantage rather than organisational benefit. Data is relegated to sitting on presentations, shoved inside desk drawers, or on impenetrable spreadsheets that make sense to noone except the analyst who created it.

But there's an appetite for doing this differently: building shared data capacity so different pockets across organisations can access and analyse information together, rather than starting from scratch on their own. If resilience depends on timely information and the capacity to respond, collective intelligence has the power to amplify the work each team is already doing individually.

The Wood Wide Web: Sharing Below the Surface

Type: Mycorrhizal Networks
Mycorrhizae (Latin)

Location: Forests, woodlands, grasslands around the world

Field Notes: Underneath the forest floor, we find a web of interconnected fungal threads linking the roots of plants and trees. These are mycorrhizal fungi. Through these networks, **nutrients like water, phosphorous, and nitrogen are redistributed**, flowing from older, established trees to younger seedlings to improve survival rates. The network can also convey chemical signals, known as infochemicals, alerting plants to stress (e.g. droughts or pests) and enabling supportive responses. This subterranean network has been dubbed the '**Wood Wide Web**', as a living data and resource highway that sustains the forest community.

Observations: Mycorrhizal networks show how sharing information and resources across a system reduces risk for individual actors. By redistributing nutrients and signalling stress early, the network supports weaker or more exposed members and improves the resilience of the forest as a whole.

The Living Model

Information becomes an intelligence asset when it circulates. When insight is shared across an organisation, it allows patterns to be seen earlier, responses to be coordinated, and decisions to be made with a broader view of the system. When information is siloed, its value is reduced, and the organisation becomes more fragile as knowledge accumulates in individuals or teams rather than the system. In practice, that means envisioning data flows as a network that spans the breadth of the organisation.

Similar dynamics apply beyond organisational boundaries. Larger organisations may benefit from having more developed data analysis and management systems, whilst smaller organisations, especially hyperlocal ones, might have a better insights into frontline or community signals. A wood-wide-web approach would be building channels that allow data to flow between organisations, in exchange for analysis or resources. Especially in a world characterised by uncertainty, when times are moving faster than many can track alone, collective intelligence gives the sector a better chance of responding and adapting rapidly.

Organisational Implications

Primary Lever:

Systems, Infrastructure & Technology

Secondary Lever:

Ways of Working

Signals: Interoperability.
Data infrastructure.
Shared systems.

Resilience increases when information is able to move across a system rather than remaining trapped in individuals, teams, or siloes. Systems that enable knowledge to circulate and be interpreted collectively, including outside their organisational boundaries, are better able to spot change early, coordinate responses, and reduce duplicated effort under pressure.

Swarm Intelligence: Be More Bee

The people at the edges – those closest to service users, communities, and delivery – often hold some of the most important insight into what's changing on the ground. Empowering these groups at the edges to have their own agency is a key component of driving rapid adaptive capacity. Yet, these teams often have limited ways to act on their insight, slowing and possibly bottlenecking response time.

Decentralised decision-making, instead, is the model of distributing authority to the people closest to affected areas; an approach which tends to generate faster responses, better flexibility; and richer ideas that tap into broader experience and context.

Swarm intelligence, or the collective behaviour emerging from local interactions, shows how effective decisions can arise without central control. Swarm systems emphasise collective problem-solving and coordination, rather than top-down demand, leveraging strong data flows and insights to empower decision-making at the edges.

Honeybees: Swarm-Based Decision-Making

Type:	Honeybee Swarm *Apis Mellifera (Latin)*
Location:	Worldwide
Field Notes:	When a colony swarms, thousands of bees leave the old hive and cluster temporarily while scouts search for a new home. Meanwhile, other bees (e.g. worker bees or the queen) stay at the old hive. **The scouts don't report to a leader,** they fan out to assess different nest sites, and return to 'pitch' their favourite option using a waggle dance. The dance is designed to transfer information about where the site is and how good it is, and stronger dances recruit more scouts to go and check that same site. What's useful here is how decisions are eventually made. A decision is triggered when enough scouts gather at one site, reaching a quorum. When that quorum is reached, scouts switch from debating to action, guiding the whole swarm to the new location.
Observations:	In bee swarms, many small, local evaluations combine into coordinated action through simple, shared rules. Decision-making power sits with those closest to the task, and action is triggered once a clear threshold is reached.

Octopus: Intelligence at the Edges

Type: Octopus
Octopus (Latin)

Location: Oceans worldwide (species vary by region)

Field Notes: A large share of an octopus' neurons sit outside the central brain, spread alongside its arms. This means that each arm has the **ability to sense and make decisions**, lending them a surprising amount of control without waiting for instructions from the brain. Essentially, octopuses don't run on one command centre, preferring to push capability towards the edges for speed and responsiveness. They're capable of exploring, gripping, and interacting with their environment rapidly, because decision-making powers sit close to the action.

Observations: Octopuses demonstrate how placing decision-making and action close to the point of contact increases speed and responsiveness. By distributing intelligence across the body rather than centralising control, the system adapts more quickly to changing conditions.

The Living Model

Swarm intelligence is all about how decisions are made and who is empowered to make them. The translation is not necessarily 'everyone has to decide on everything together,' but rather about designing decision-systems where distributed data flows (as discussed in Data Sharing: The Wood Wide Web) are aggregated into coordinated action at the edges.

'Swarm intelligence is all about how decisions are made and who is empowered to make them.'

The octopus example, meanwhile, shows us that autonomy at the edge matters for resilience. This is all about empowering staff working directly with communities or service users to make context-relevant decisions without needing every action signed off by central authority. Decisions made through this model leverage local knowledge and experience.

Operationally, this means building lightweight decision frameworks to specify scope (who is empowered to decide what); thresholds (which local insights require a joint response); and feedback loops. It also requires collective intelligence infrastructure, through platforms and routines that carry insights across teams and back again. This is how swarms navigate complexity, and how we can harness the same logic to turn dispersed knowledge at the edges into coordinated impact.

Organisational Implications

Primary Lever:

Structure, Decision Making & Governance

Secondary Lever:

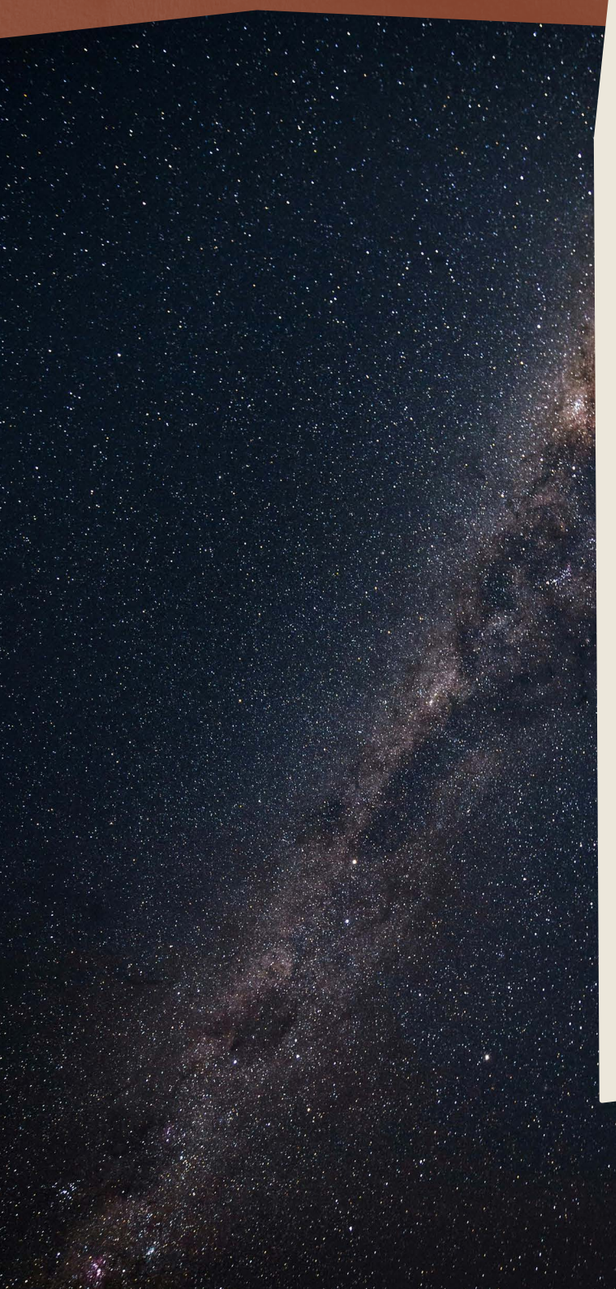
Ways of Working

Signals: Local autonomy.
Feedback loops.
Decision thresholds.

Adaptive capacity increases when decision-making authority sits close to where information is generated. Systems that clarify decision rights, support local autonomy, and define when coordination is required are better able to respond quickly without creating bottlenecks or relying on central control.

GOOD FUTURES
FROM GOOD INNOVATION

Shared Language: Reading The Same Sky



Most organisations have an unofficial second language that never makes it into the induction pack. Think of the shorthand people use in meetings, what 'good' looks like day to day, which risks matter most, what you escalate vs. what you handle quietly, etc. This shared language is what enables organisations to 'read the same sky' – interpret data points similarly, react as a cohesive organisation, etc. Essentially, if you want situational authority and faster decision-making, you need people to see and name the world in roughly the same way.

This doesn't just benefit an organisation from a resilience point of view: shared language is also a component of psychological safety in the workplace, linked to **better learning, transparency, and performance**. Teams with stronger shared language **report higher perceived quality of care and job satisfaction**, as well as stronger relationships within the workplace.

'Shared language is also a component of psychological safety in the workplace'.

Vervet Monkeys: Clear Signals

Type: Primate Communication System
Chlorocebus pygerythrus (Latin)

Location: East Africa

Field Notes: Vervet monkeys use different alarm calls for different threats. In classic field studies, researchers **observed distinct calls for predators like leopards, eagles, and snakes**. Each of these calls triggers a different action. The leopard calls will send monkeys up into trees, but the eagle alarm might prompt scanning upwards and evasive movement strategies. They're all signals that the group has learned to interpret the same way. Similar to human babies and their languages, young vervets are not born speaking this code. Their responses become more **accurate over time as they observe and tune behaviour**, and exposure can shape how quickly they learn. New members of the community have to be onboarded before they can speak the same language.

Observations: Vervet monkeys survive by translating individual observations into coordinated group action through a shared, learned code. Because signals are interpreted consistently across the group, responses are fast and aligned. New members must learn this code before they can act effectively within the system.

The Living Model

Practically, creating a shared language (or reading the same sky, if you will) is about making tacit knowledge visible. Which signals matter the most in your organisational context, and how can you make them legible? Creating a strong shared language relies on repeated reinforcement of the same signals, through consistent, shared practice, recognising that some of that language will be non-verbal, sitting in behaviour and action rather than syntax.

Crucially, creating a shared language depends on listening and onboarding. Young vervet monkeys **learn which calls matter by watching how adults react**. The organisational equivalent is making space for questions and open conversation, as well as consistent answers. Induction and cross-team communications are places where code is taught, updated, and legitimised.

Shared language supports autonomy by reducing the risk of misinterpretation. Exercising situational authority becomes much riskier when your staff aren't confident they're reading the sky the same way that others will. A clear shared language gives people permission to act without waiting for translation, and makes it more likely that, when they do, everyone else will understand why.

Organisational Implications

Primary Lever:

Ways of Working

Secondary Lever:

Leadership, People & Capability

Signals: Shared language. Situational authority. Semiotics.

Decision-making becomes faster and more coherent when people interpret signals in the same way. Systems with a strong shared language enable individuals to act with confidence, reducing the need for constant translation, escalation, or reassurance under pressure.

Case Studies

Mondragon

Mondragon is a Spanish industrial co-operative, with a strong focus on creating mutualistic company culture. Their system is based on the core principles of co-operation, participation, social responsibility, and innovation. In practice, this includes reciprocity towards team members in the form of: all workers having equal right to vote; managing boards consist of employees from all levels; 70% of profits after taxes are redistributed across the organisation; and workers are regularly re-allocated across teams to support the subsidiaries most in need.

So What: Mondragon's mutualistic system is a great example of a culture of reciprocity. Value circulates throughout the organisation, giving employees greater buy-in and satisfaction, and care is rotated to where it's most needed.

Patagonia

In 2022, Patagonia famously made Earth its only shareholder by transferring all stock to two entities: the Patagonia Purpose Trust (2% voting stock, to protect company values) and the Holdfast Collective (98% non-voting stock, to use all profits for environmental causes). This year, they've released their first Work in Progress report, detailing the progress they've made and the challenges they've faced along the way. The report covers their governance structure, product quality and sustainability, giving, and activism.

So What: Patagonia is a great example of a mutualistic relationship with our suprasystem – nature. The company embodies a system of reciprocity with their natural environment, adopting a stewardship role by funnelling all of their profits back into nature. At the same time, they create an internal culture of reciprocity, by protecting company values, which include giving all employees the tools and resources they need to embody sustainability and stewardship practices in their personal lives.

The Data Collective

The Data Collective is a community of individuals working in the UK charity sector focused on creating better data infrastructure. The community is designed to help charities to access and analyse data better, to scale impact. They achieve this goal by connecting people facing similar data challenges across the sector, as well as helping charities share their data with others where possible.

So What: Data sits at the heart of navigating change. Collecting it, tracking it, making sense of it, and adapting according to it. The Data Collective points out that we don't have to do this in isolation – collaborating on shared challenges allows the sector to avoid duplication of effort and scale the impact data can have.

A community for people using data in the social sector

Spotify

Spotify's approach to agility for resilience is by structuring their company as decentralised, cross-functional teams (which they dub 'squads') that operate as mini-startups in the company. Each of these teams is self-organising, with ownership of the features they create. The 'squads' themselves sit within broader 'tribes,' which promote cross-team collaboration, and 'chapters' to enable knowledge sharing across the organisation.

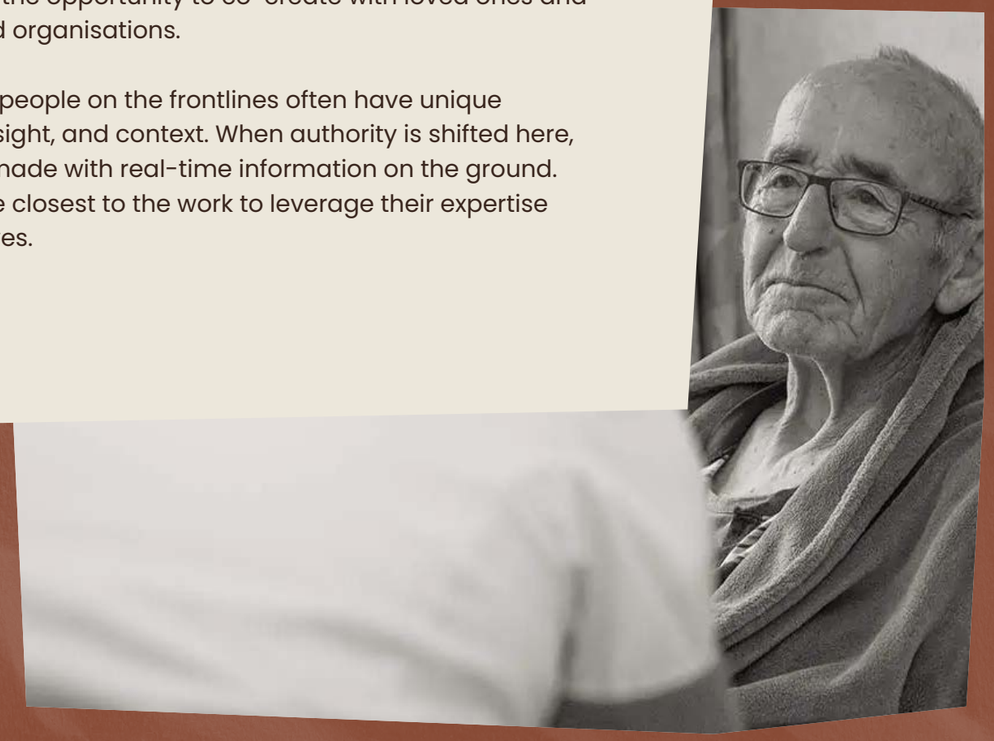
So What: At Spotify, power is pushed to the edges. 'Squads' own outcomes end-to-end, so decisions are made where information and context is held. This autonomy is then bounded by shared ways of working, frameworks for cross-team collaboration, and knowledge sharing.

Case Studies

Buurtzorg

In the mid-2000s, home care services in the Netherlands for chronically ill people, people with dementia, and individuals in need of end-of-life care became increasingly fragmented. Common issues faced were a lack of continuity in care, declining quality, rising costs, and a disillusioned workforce. In response to this crisis, nurses created Buurtzorg, a patient-centred alternative. This care system shifted decision-making to the frontline, without central management, to empower nursing teams and give them the opportunity to co-create with loved ones and neighbourhood organisations.

So What: The people on the frontlines often have unique information, insight, and context. When authority is shifted here, decisions are made with real-time information on the ground. Empower those closest to the work to leverage their expertise and perspectives.



Netflix

In 2009, Netflix published a now-infamous powerpoint presentation on their company culture. Chances are, if you've done research on company cultures, you've come across this deck. In 2024, they released an updated version (the fourth iteration), which all employees were invited to critique and feed back on in a practice they refer to as "farming for dissent". The memo includes Netflix's ethos, principles and values in detail, giving transparency and alignment to all employees, both existing and incoming.

So What: Netflix's company culture deck is essentially a dictionary for shared language. It gives employees clarity on decision-making, prioritisation, principles, values and more. Crucially, by regularly revisiting the guidebook and inviting input from staff, they allow those who actually live and breathe this culture to help shape the frameworks that new staff are onboarding into.

Transformation: The Cycle of Renewal

Introduction

Change doesn't arrive in a single moment of clarity, fanfare or fireworks. More often, it's a long, grinding process of accumulation, and eventually something has to give. Transformation, in this context, isn't a heroic leap forward, or a wholesale renewal. It isn't ripping off the bandaid in favour of yet another target operating model. It's a cycle of constant change. Of testing, iterating, regenerating and monitoring.

The problem is that most of our organisations aren't designed for cycles or seasonality. They're designed for linear continuity. Delivery models assume stability in order to resource. Five-year strategies assume a linear progression, with no bumps in the road. Success is measured by growth and output. Even the Charity Commission reviews the efficacy of our organisations based on a statement of accounts, rather than assessment of impact.

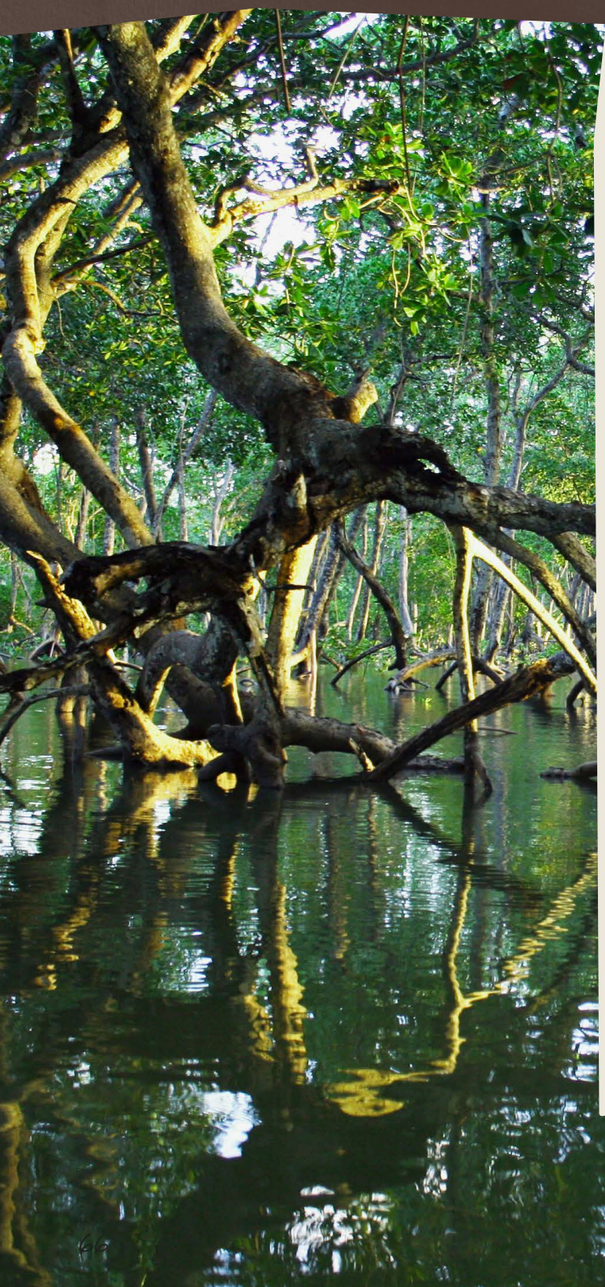
As a result, stopping, pausing, pivoting or ending activity becomes culturally coded as failure rather than maintenance. Work continues because it exists, not because it still fits the context. Programmes linger past their usefulness. Processes calcify, and renewal gets pushed to the margins, treated as something you do on top of the day job, rather than something the system is built to support.

And there's a good reason for this. The energy and skills required to transform, disrupt, or radically rethink doesn't sit comfortably inside BAU. It's disruptive by nature. It creates friction. It questions everything. And if it's not contained, protected, and deliberately channelled, it either burns people out or gets neutralised by the core. So organisations default to preservation, even when that preservation is slowly hollowing them out.

Nature doesn't make this mistake. Living systems survive because they expect disruption, decay, and limits. They create protected edge zones where new combinations can emerge without being crushed by the core. They use disturbance to clear dead matter and recycle resources, rather than letting fragility build unnoticed. And they are acutely sensitive to thresholds, intervening early when systems are bending towards irreversible change.

This section explores what it takes to build those same renewal cycles into organisational life. You'll find examples of how new ideas emerge at the edges, why endings are a prerequisite for regeneration, and how tipping points quietly form long before they announce themselves. Together, these patterns point to a new behaviour: transformation isn't something you do once the pressure becomes unbearable. It's something you practise continuously, or risk being transformed by forces you no longer control.

Innovation: Explore Your Edge Zones



Innovation comes from collision. Hence, it tends to appear at the boundaries, in your edge zones: where teams meet and different forms of knowledge collide. We've already touched on the idea that knowledge and perspective diversity increases the pool of ideas and improves problem-solving, only when organisations create structures that help people translate those differences into shared insight (see Resilience Through Diversity: A Balanced Biome for more on this). The challenge for many organisations is that our operating models don't always create these structures for diverse collaboration.

Ecologists call places where ecosystems overlap **ecotones**, the edge zones where diversity is highest, and therefore novelty is common. These are environments defined by tension and difference, and they tend to host more species, more productivity, and more adaptive behaviour than the systems that sit on either side. Edge zones essentially offer two key conditions that drive innovation: exposure to difference, alongside protection from the pressures of the main system. We need these edge zones to generate new ideas and innovation.

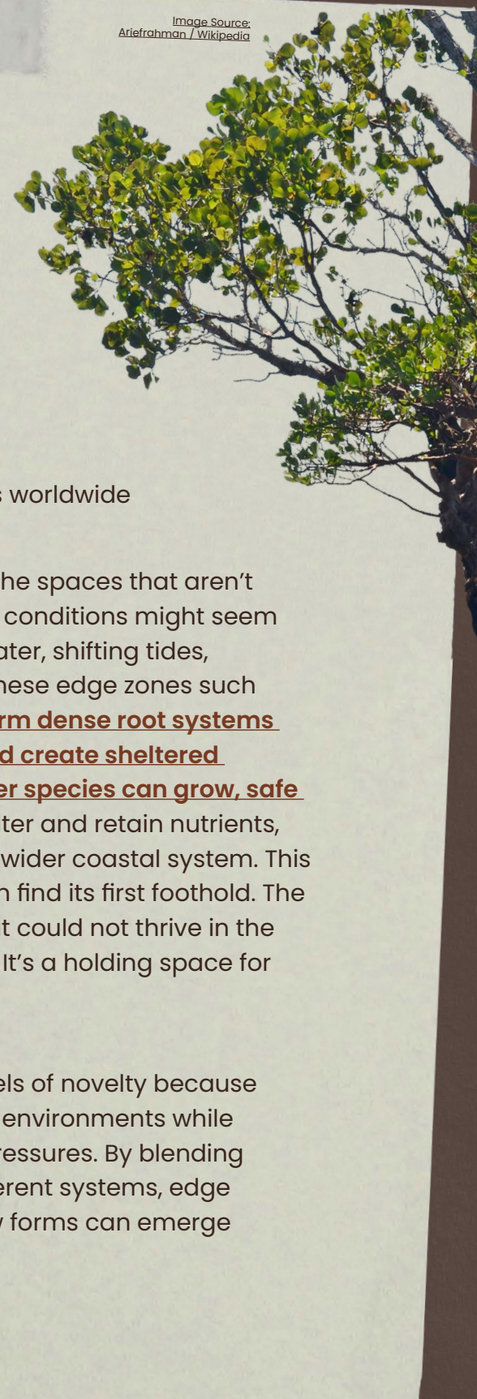


Image Source: Ariefrahman / Wikipedia

Mangroves: The In-Between

Type: Coastal Edge Ecosystem
E.g. Rhizophora (Latin)

Location: Tropical and subtropical coastlines worldwide

Field Notes: Mangroves live in the in-between, the spaces that aren't fully land or sea. At first glance, the conditions might seem awkward. You're likely to find saltwater, shifting tides, unstable ground, etc. So, why are these edge zones such busy environments? **Mangroves form dense root systems that slow water, trap sediment, and create sheltered pockets where young fish and other species can grow, safe from common threats**. They also filter and retain nutrients, supporting high productivity in the wider coastal system. This is a 'messy' zone where new life can find its first foothold. The edge supports a mix of species that could not thrive in the open ocean or on dry land nearby. It's a holding space for nurturing growth.

Observations: Edge ecosystems support high levels of novelty because they combine inputs from multiple environments while providing shelter from dominant pressures. By blending resources and influences from different systems, edge zones create conditions where new forms can emerge and stabilise.

The Living Model

Edge zones are collision points where diverse perspectives meet under conditions that protect early experimentation. These zones thrive because they integrate inputs from different sides of a boundary, producing outputs (e.g. new life, shelter, or nutrients) that neither side could generate alone. Similarly, in organisations, innovation spaces work best when they're connected but distinct: they sit within the organisation's purpose and resources, but are structured to be sheltered from conventional operational pressures to allow new ideas to flourish. The purpose is to bring difference into sustained, structured contact.

'In organisations, innovation spaces work best when they're connected but distinct.'

For these edge zones to work productively, they need porous boundaries. Essentially, they're siloed with membranes, instead of walls. These membranes should function as clear points of exchange where ideas get exposed to core priorities, feedback loops bring insight back in, and teams outside the edge can observe and respond.

'Collision of difference and perspective is what enables innovation.'

Research suggests the concept of the '**collaborative middleground,**' where large organisations invest in creating spaces exempt from traditional hierarchies to create cross-level teams encouraged to develop new ideas in a safe and creative environment. These middlegrounds thrive off voluntary participation, creative pairings of diverse perspectives, and playful structures. **Three key mechanisms** are crucial to the functioning of these spaces: rules of playfulness (in structure, thinking, and creativity); promoting emotional and social interactions; and driving cognitive engagement through co-ownership.

Collision of difference and perspective is what enables innovation. Design and explore your edge zones with principles of diversity and innovation in mind.

Organisational Implications

Primary Lever:

Structure, Decision Making & Governance

Secondary Lever:

Ways of Working

Signals: Boundaries.
Alternative metrics.
Permission to stop.

Innovation becomes possible when organisations create clear boundaries between core delivery and exploratory work, and when early ideas are not judged by the same measures as established activity. Just as importantly, renewal depends on explicit permission to stop or let go of work that no longer fits the context. Without space to pause, shed, or end initiatives, systems struggle to create the conditions in which genuinely new approaches can take root.

Born Out of Fire: Regeneration Through Disruption

Image Source: NPS/C REID

Disruption is usually framed as a threat. Something to manage, minimise or neutralise. The instinctive response is to protect the core by tightening controls and keeping everything running as is. That can work in the moment, but over time it hardens into stagnation: programmes that continue by default, processes that persist because no one has permission to end them, and resistance to alternative approaches that sit outside the system.

Instead, is there an opportunity to treat disruption as part of our operating rhythm by building in new ways to review, prune, and restart? Small, regular, and managed disruption can prevent greater instability later on. For example, in public land management, **prescribed burning is used to reduce fuel build-up and avoid more severe, disruptive fires**. Similarly, Indigenous farmers in Xingu, Brazil, use **controlled fires before cultivating land, in order to fertilise and aerate the soil** by breaking down build-up of organic carbon. This is precisely because suppressing all disturbance can make the situation worse when the inevitable rolls around. We're not advocating for 'burning everything down', but recognising that avoiding change at all costs often stores up bigger, more painful change later on.

Pine Cones: Fire Ecology

Image Source: Ask Nature

Type: Fire-Adapted Trees
Pinus (Latin)

Location: North American conifer forests

Field Notes: Some conifer trees, like lodgepole or jack pines, have cones with seeds that are sealed with resin for years. These cones are designed to protect the seeds through to maturation, with the resin warding off predation and decay. In the event of a fire, however, **high temperatures soften or melt the resin**, opening the cones and releasing seeds into newly cleared, nutrient-rich ground with less competition. These species have adapted to a system where wildfires are part of the cycle of life. Fire clears the undergrowth and recycles nutrients, and pine cones have adapted to take full advantage of this disruption.

Observations: In fire-adapted ecosystems, disruption is not a failure of the system but a condition of renewal. Fire clears space, recycles nutrients, and creates the conditions in which the next generation can establish.

Image Source: Ask Nature

Image Source: The Natural Edge

Nurse Logs: Regeneration

Type: Ecosystems on Dead Wood
E.g. Piceea sitchensis (Latin)

Location: Temperate and boreal forests in the Northern Hemisphere

Field Notes: When a tree falls in the forest, it has a chance of becoming what's known as a '**nurse log**'. These decaying trunks have the perfect conditions for establishing new life, by holding moisture and moderating temperature, as well as offering a stable surface for seedlings. The deadwood supports small saplings, and provides a home for fungi, invertebrates, and other organisms. These trees contribute to their ecosystem, even post-mortem. Nothing goes to waste in the forest ecosystem, and decaying matter becomes a platform for new growth.

Observations: In forest ecosystems, decay is productive. Deadwood becomes a platform for regeneration, supporting new life long after the original organism has ended.

The Living Model

Endings are not a failure of leadership or strategy. They're a structural requirement for renewal. In ecological systems, disruption exists to prevent stagnation. Fire clears accumulated dead matter, releases locked-up nutrients, and creates the conditions for regeneration. Suppressing disturbance doesn't produce stability. It stores risk, allowing fragility to build until collapse becomes unavoidable and uncontrolled.

Organisations behave in similar ways. When programmes, processes, or ways of working are kept alive by default, they gradually harden into deadweight. Effort shifts from learning and adaptation towards preservation. Innovation slows not because people lack ideas, but because there is no space for anything new to take hold.

Planned disruption changes this dynamic. Time-bound initiatives, explicit review cycles, and clear criteria for stopping allow organisations to shed work that no longer fits the context. These endings are not acts of destruction. They are acts of maintenance. They reduce fuel build-up and make future change less violent.

Crucially, endings only become regenerative when learning and value are carried forward. In ecosystems, nurse logs turn decay into infrastructure for new growth. Organisationally, this means treating finished work as legacy rather than waste. Knowledge, relationships, and insight need to be deliberately transferred, not abandoned.

Not every mission is endless. Sometimes renewal means transformation. Sometimes it means closure. Organisations, like ecosystems, can **die well or die badly**. Avoiding that reality does not remove it. It only delays the moment when disruption becomes unmanageable.

Organisational Implications

Primary Lever:	Secondary Lever:
	
Structure, Decision Making & Governance	Leadership, People & Capability

Signals: Endings. Renewal. Reset.

Regenerative organisations treat stopping as a core capability rather than a last resort. Clear review cycles, explicit permission to end work, and deliberate transfer of learning allow systems to renew without crisis. Where endings are avoided or obscured, risk accumulates, adaptability declines, and disruption becomes more destructive when it eventually arrives.

Tipping Points: Holding The Line

Some disruption comes out of nowhere, blindsiding us and throwing the best-laid plans into disarray. Other types of disruption are caused by a quiet build-up of pressure over time, eventually producing a seemingly sudden or rapid shift – even though the signs have been there all along. These rapid shifts are tipping points (the most famous example of which are the **climate tipping points**), where a small extra push near a threshold triggers a dramatic change in state. The straw that broke the camel's back, as it were. Once these tipping points have been reached, returning to 'normal' is much harder than it would've been to intervene earlier in the process. This looks back at continuous monitoring and micro-adaption to build resilience (see more in Resource Management: What The System Knows). But it also relies on knowing where your organisational tipping points are, and what to watch out for.

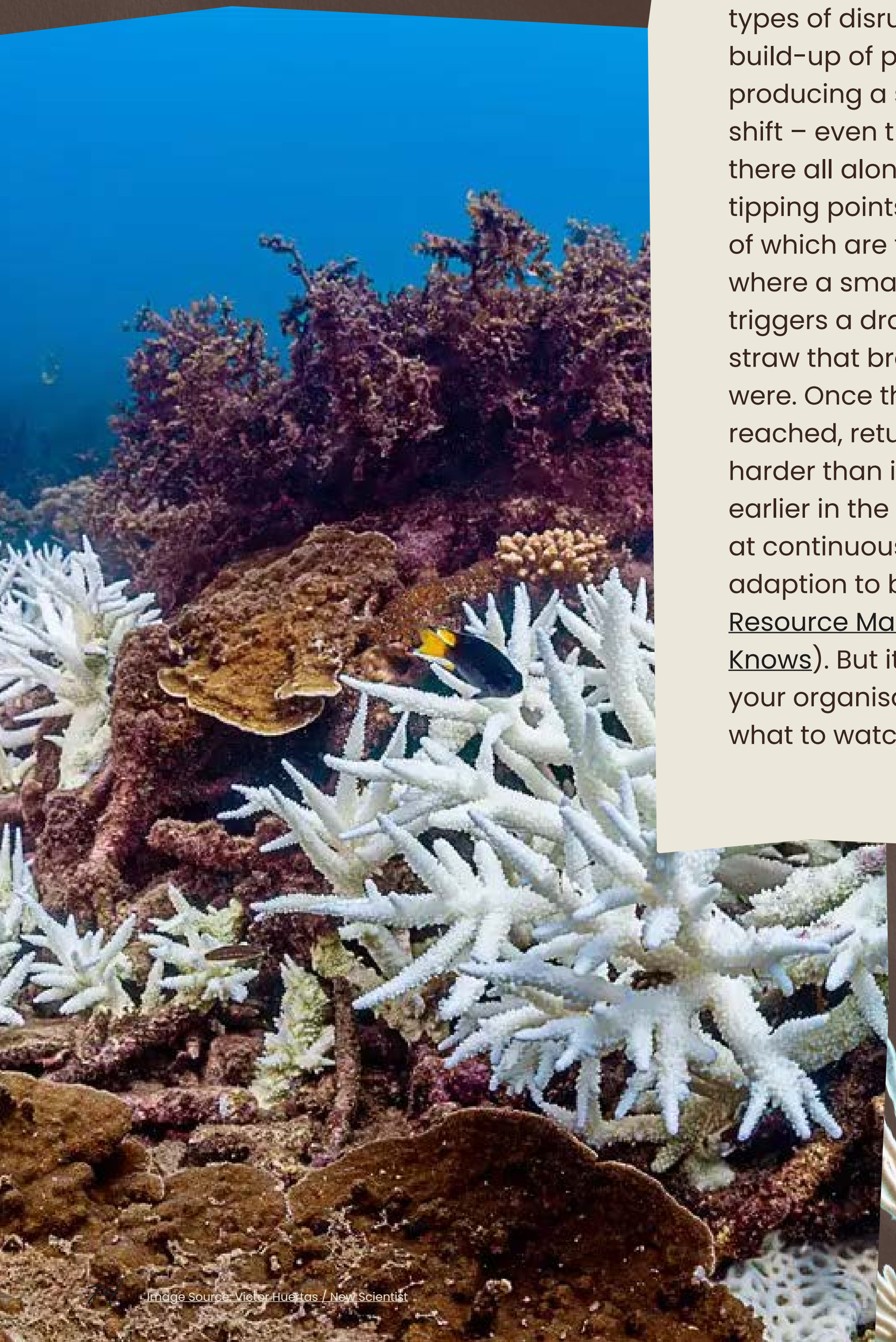


Image Source: Victor Huertas / New Scientist

Coral Reefs: Bleaching Shifts


Image Source: U.S. Geological Survey / GVI

Type: Reef Ecosystem
Anthozoa (Latin)

Location: Tropical and subtropical oceans worldwide

Field Notes: Corals rely on a symbiotic relationship with microscopic algae (zooxanthellae) that supply much of their energy. It's also where corals get their vibrant colours from. When water temperatures rise, that relationship breaks down and the coral expels the algae, in what we know as bleaching. Severe or extended exposure to heat can push **coral reefs past a tipping point where recovery becomes much harder to achieve**, leading to widespread damage to global coral reefs. Recent global monitoring data shows that rising ocean temperatures have **affected roughly 84.4% of the world's reefs**. This is the most widespread bleaching on record, and a sign of how quickly conditions can shift once climate thresholds are crossed.

Observations: Coral reefs demonstrate how systems can cross thresholds beyond which recovery becomes significantly harder. Once a tipping point is passed, restoring the previous state requires far more effort than preventing the shift in the first place.

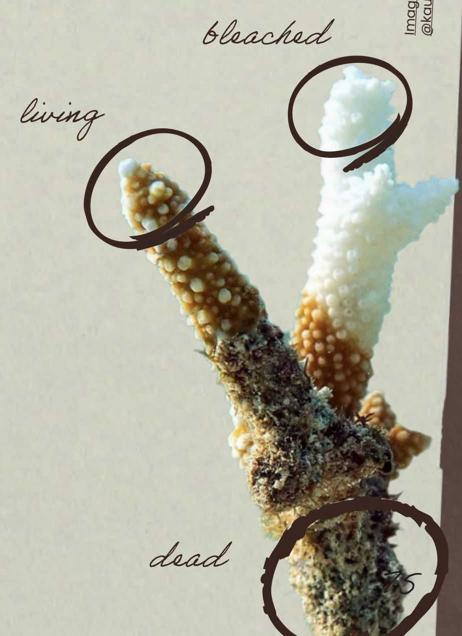
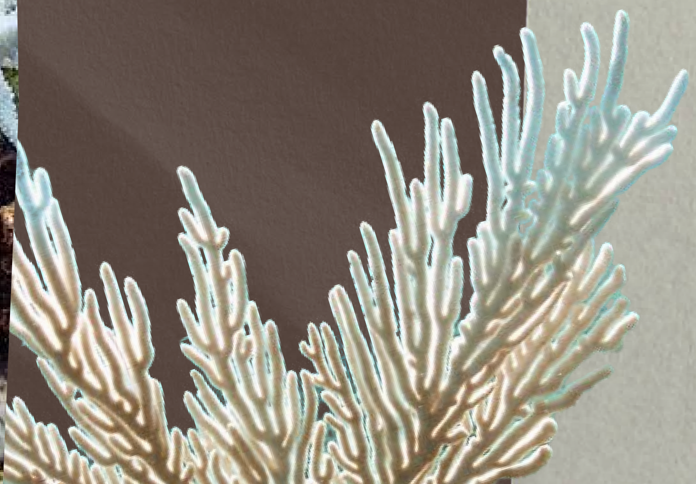


Image Source: @sea.trees / @kaushmano, Instagram



The Living Model

Organisations, just like nature, have their own tipping points. Extended, 'typical' work stress may compound over time, until it rapidly turns into burnout and overwhelm while we weren't looking. Some of these trajectories may be non-linear, but they're building up all the same. Early intervention makes all the difference in preventing irreversible change.

Part of this is building the required signal-tracking systems and early intervention mechanisms. You have to see where the system is bending in order to intervene before it breaks. Buffers are similarly important. Healthy ecosystems, for example, have redundancy and diversity to slow decline and prevent sudden collapse. Similarly, we need to build redundancy into our relationships, knowledge, and capability. Spread critical knowledge and stewardship so that no single person or team is a single point of failure. Ensure co-ownership of high-risk activities or high-burden projects. Another practical lever to pull is to embed relief valves into normal operations, where early signals that you're inching towards your tipping points can trigger automatic re-assessment of the state of affairs.

'You have to see where the system is bending in order to intervene before it breaks.'

'Early intervention makes all the difference in preventing irreversible change.'

You're trying to avoid the moment where one extra, avoidable thing flips the whole organisation into a new operating mode under constant stress. Being aware of your tipping points allows them to be reframed as dynamics that can be treated and managed. Early, deliberate intervention is always going to be cheaper, easier, and healthier for everyone involved than recovery after collapse.

Organisational Implications

Primary Lever:

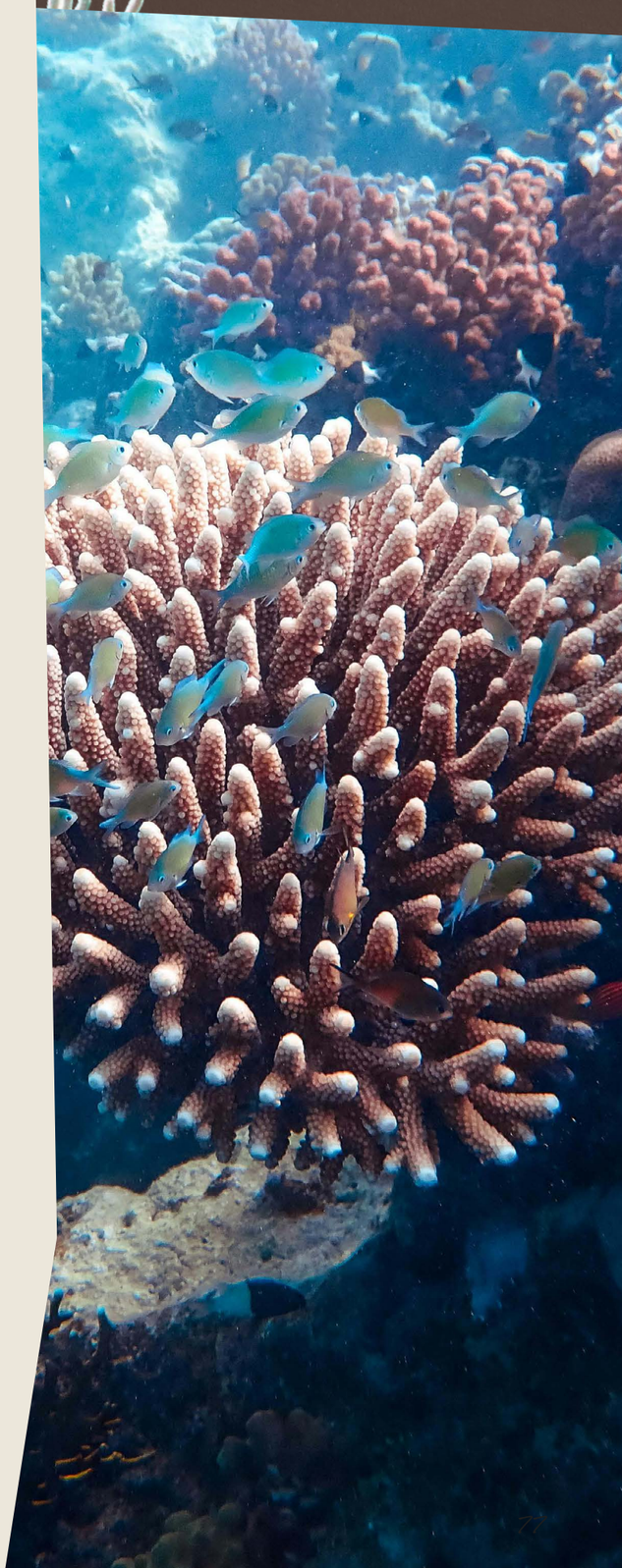
Systems, Infrastructure & Technology

Secondary Lever:

Leadership, People & Capability

Signals: Thresholds.
Lead indicators.
Point-of-no-return.

Resilient organisations monitor not just performance, but proximity to critical thresholds. Systems that track early indicators, maintain buffers, and pay attention to how long recovery takes are better able to intervene before stress hardens into collapse. Once tipping points are crossed, restoring capacity becomes slower, costlier, and more disruptive than early adjustment would have been.



Case Studies

Pixar

Perhaps the obvious example for innovation through collision of varied perspectives, Pixar literally built their headquarters to facilitate this. Their atrium serves as the 'central artery', around which all communal key services are concentrated. The idea is that employees from different teams and disciplines would cross paths more often, rather than being siloed, leading to more creative collaboration.

So What: Innovation comes from collision. In this case, literally – the building is designed to allow staff to bump into each other as often as possible. Where are your shared spaces for collaboration? Do you have pockets of physical or metaphorical space where cross-team collaboration can happen organically?

3M

This company believes that freedom to explore is at the heart of innovation. They encourage their employees to spend 15% of their working time focusing on passion projects, using company resources and building up their own unique teams. Some of the results of this programme have led to the company's more innovative inventions, including multi-layer optical film, which you're likely looking at right now if you're reading this on a screen!

So What: Your employees work for you because they're passionate about your mission. Many of them likely have relevant ideas or passion projects, but lack the resources to action these. 3M pushes innovation capacity to the edges by empowering staff to build the solutions they care about.

Case Studies

Alzheimer's Society

Alzheimer's Society's Launchpad is an incubator designed to help people de-risk, validate, and pitch dementia innovation product ideas. The organisation positions it as a safe space for entrepreneurs to turn untested ideas into viable propositions. Crucially, the programme allows participants to have access to people with lived experience, health and social care professionals to validate ideas, as well as a business mentor and dementia systems mentor.

So What: Alzheimer's Society's Launchpad is essentially an edge zone: a protected boundary space where innovators collide with lived experience, systems experts, and commercial support to develop and de-risk ideas.

IFRC

The IFRC's Disaster Response Emergency Fund (IFRC-DREF) has an anticipatory pillar that enables them to take early action before disasters strike. It uses a forecast-based financing approach, where the organisation will agree funding to National Societies for early action in advance of a predicted hazard. Said money is then released automatically if the pre-defined thresholds (or tipping points) for the hazard are met.

So What: When we talk about tipping points in this report, we primarily looked at internal tipping points (e.g. cultural or wellbeing). The IFRC-DREF is a great example of anticipatory thinking externally, that lends itself to a similar philosophy internally: identify your tipping points, create a plan of action for when/if you hit these in advance, and continuously monitor the situation.

Culture: Designing for Uncertainty

We wrote this report not because we wanted to use nature as a direct analogy for how we need to change our organisations, but as inspiration for alternative approaches to survival.

What becomes clear through the research is that resilience: the required structure, energy and systems required to navigate continued uncertainty, isn't driven by one individual, a single intervention, or a beautiful target operating model on a 72 page slide deck. (We haven't found anything analogous to Powerpoint in the natural world, which is probably proof in itself).

In nature, resilience is shaped by how pressure moves through a system, where decisions sit and with whom, how information is shared, and who ends up carrying the strain when crises continue. This is where culture shows up. Not as values on a wall, but as a cumulative effect of leadership behaviours, shared language, delegated authority and governance structures, data practices, and performance expectations.

These are the functional mechanics that decide whether uncertainty is absorbed and weathered, or the thing that breaks the system (and people).

'In nature, resilience is shaped by how pressure moves through a system, where decisions sit and with whom, how information is shared, and who ends up carrying the strain when crises continue.'

This chapter is written to help translate the ecological patterns and case studies explored in the previous sections, through the lens of Good Innovation's growth levers. Each one looks at what tends to break under prolonged pressure, what you need to notice before the damage sets in, and what you can do now to design differently.

This isn't about copying nature. It's about learning from the systems that already know how to hold change without collapsing under the weight.

Leadership, People & Capability

What breaks under pressure

Under sustained uncertainty, leadership systems tend to fail quietly rather than dramatically. Decision-making bottlenecks. Emotional labour concentrates in a few roles. The same people become fixers, translators, shock absorbers. You know who they are.

Burnout doesn't arrive with a bang. It shows up incrementally, after months of coping, when capacity has already been spent. By the time it's visible, the damage is usually done, and people choose to leave rather than rebuild. Sometimes it surfaces abruptly, through public exits or crises that look sudden, but rarely are.

This mirrors what we see in ecological systems pushed beyond their limits. Coral reefs don't collapse because of a single heat spike, but because prolonged stress pushes them past a point where recovery becomes difficult. Leadership works the same way. When it depends on individual stamina, the system becomes fragile long before it looks broken.

'Under sustained uncertainty, leadership systems tend to fail quietly rather than dramatically.'

What to notice early

In living systems, early warning signs are easy to miss if you're not looking for them (or you're looking at the wrong things). Trees slow their growth after drought. Geese rotate leadership before exhaustion sets in.

'In living systems, early warning signs are easy to miss if you're not looking for them (or you're looking at the wrong things)'

In organisations, the signals are quieter but just as consistent:

- Chronic overload in specific roles
- Escalation becoming the default, even for small or local issues
- "Just get through this period" quietly becoming the operating mode
- All the invisible labour that magically appears when the system can't cope

These are not cultural quirks or things to easily dismiss. They're indicators that leadership capacity is running on fumes.

What to design for

Resilient systems do not rely on endurance. They rely on rotation, recovery, and shared load. Leadership that holds under pressure is designed around:

- Protected reserves, where emotional and cognitive capacity are treated as finite, and worth safeguarding
- Shared and rotating leadership, so the hardest roles don't calcify into single points of failure
- Clear thresholds, where rising strain triggers review and adjustment before burnout sets in
- Mutualistic relationships, where care, decision-making, and responsibility circulate rather than concentrate.

This is the logic we see in geese formations, mycelial networks, and other resilient systems. Leadership isn't a fixed position. It's a function that shifts to keep the whole moving. The question isn't whether your leaders are strong enough. It's whether your leadership culture can survive pressure without consuming the people inside it.

Systems, Infrastructure & Technology

What breaks under pressure

When systems are under strain, information can grind to a halt. Insight pools in individuals, teams, or tools that don't talk to each other. Decision-making slows because no one is confident they're seeing the full picture and analysis paralysis steps in. Data stops being a useful indicator and becomes a signal of stress and imminent calamity.

In these conditions, organisations default to lagging indicators. Financial reports. Delivery metrics. Retrospective dashboards. If your data is all retrospective, by the time you realise there's an issue it's already too late to act.

'If your data is all retrospective, by the time you realise there's an issue it's already too late to act.'

And all of this combined creates a house of cards. When knowledge lives solely in people rather than infrastructure, continuity depends on who stays, who leaves, and who remembers what happened last time.

What to notice early

Living systems survive by responding to weak signals. Algae react to changes in water quality long before ecosystems collapse. Mycorrhizal networks pass stress signals underground before damage becomes visible above the surface.

Organisationally, early signals often include:

- Multiple teams asking overlapping questions without coordinating or aligning on the brief
- Organisational history sitting with one person, rather than a shared repository
- Meetings spent arguing over interpretation rather than deciding what to do
- Crises that arrive with a sense of inevitability rather than disbelief.

These are signs that information is being gathered, but not circulating.

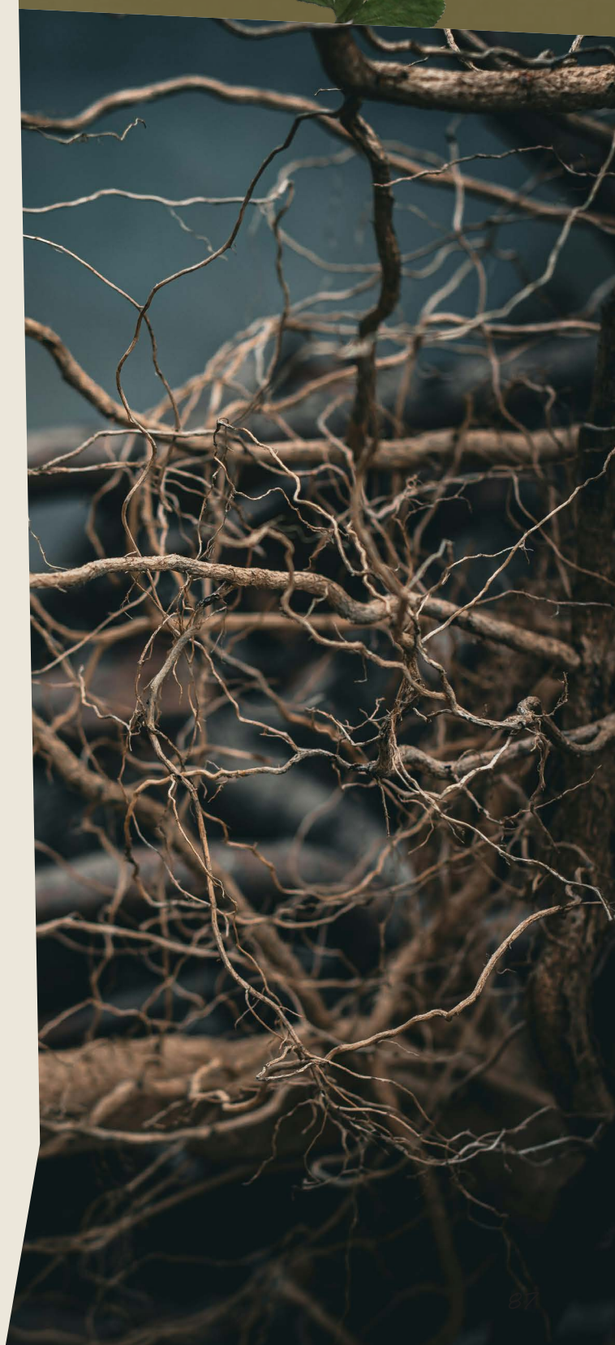
What to design for

Resilient systems treat information as a shared asset, not a private resource. Infrastructure that holds under pressure is designed around:

- Data flows, where information can move across teams and roles without friction, both inside and outside the system
- Early indicators, not just outcome metrics, so change is spotted before it's too late to act
- Feedback loops, where insight leads to adjustment, not just reporting
- Shared systems, so learning survives staff turnover and organisational change.

This mirrors the logic of the Wood Wide Web. Nutrients and signals move through the network to where they're needed, buffering risk and supporting the whole.

For most of our organisations, the challenge is circulation. Information doesn't move far enough, fast enough, or to the people who can act on it. And even when it does, it only becomes useful when it changes what people do, not when it gets reported.



Ways of Working

What breaks under pressure

When uncertainty becomes the status quo, ways of working don't immediately 'fail' as we might expect them to.

In moments of acute crisis, organisations often do something surprisingly healthy. They let go. Delegated authority shifts to move decision-making closer to the work. Long approval chains are bypassed in order to move at pace. People trust each other because there's no time not to and they're all pulling in the same direction. During Covid, many charities proved they could act faster, collaborate more, and deliver differently when the old rules stopped making sense.

The failure comes afterwards. As conditions stabilise, even partially, those adaptations are rarely held onto. Temporary permissions are treated as emergency exceptions rather than evidence of a better operating model. Old processes creep back in, not because they're effective, but because they feel familiar. Control returns quietly, one form, one sign-off, one standing meeting at a time.

'During Covid, many charities proved they could act faster, collaborate more, and deliver differently when the old rules stopped making sense.'

And the reality is that that rapid pivot was never sustainable. Without the underlying systems of governance to protect, and a culture of leadership to sustain, hidden labour is what enabled those changes to happen in the first place. And those individuals were, in the case of Covid, burnt out.

Over time, the organisation slips back into old habits. Not because people want control, but because uncertainty makes everyone nervous. People spend their time preparing to decide, rather than actually deciding. The work keeps moving, but more slowly, and with less confidence. This isn't a lack of effort or intent. It's what happens when flexibility isn't designed to last.

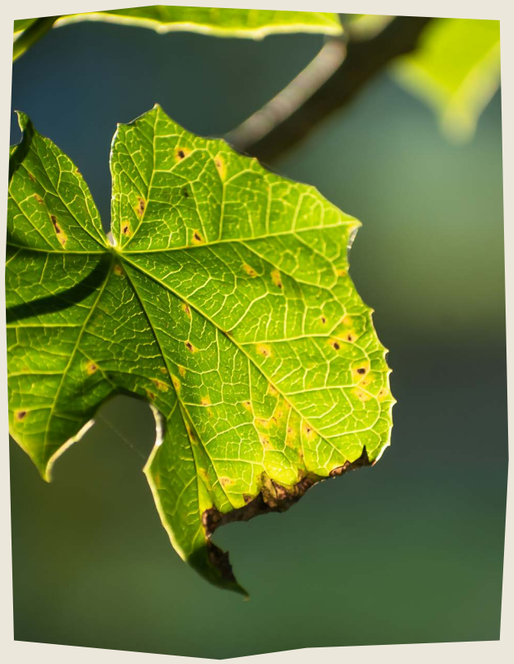
What to notice early

In living systems, the warning signs show up long before collapse. Not as drama, but as drag. Growth slows. Movement becomes cautious. The system spends more energy maintaining itself than responding to what's changing.

'In living systems, the warning signs show up long before collapse.'

In organisations, the signals look mundane rather than alarming, which is why they're so easy to ignore:

- Temporary workarounds quietly becoming permanent, without ever being reviewed
- Decisions defaulting back up the hierarchy, even when the context hasn't changed
- People asking for reassurance rather than clarity
- More time spent coordinating work than doing it
- "Let's just get through this phase" stretching on indefinitely.



None of these are crises on their own. Together, they point to a culture that's losing confidence in its own ability to act. The organisation starts preparing for uncertainty instead of working with it.

These are the moments when organisations tell themselves they need more process, when what they actually need is to stabilise the behaviours that already proved they could move.

What to design for

When adaptability only shows up in emergencies, it burns people out and then disappears again, leaving a cultural aftermath. That's not resilience. That's adrenaline and cortisol.

That means we need to design ways of working that can hold uncertainty without snapping back to control at the first hint of risk. In practice, that looks like:

- Explicit permissions, so teams know what they can decide without escalation, even when conditions are unclear
- Lightweight governance, that supports pace rather than slowing it down once things feel less urgent
- Fewer, clearer rules, focused on intent and outcomes rather than exhaustive process
- Review cycles, where temporary ways of working are examined and either embedded or deliberately ended.
- Shared understanding, so people don't need constant reassurance to act with confidence.

'In ecological systems, adaptation isn't an emergency response. It's structural.'

In ecological systems, adaptation isn't an emergency response. It's structural. Mangroves absorb storms because they're built that way. Slime mould micro-adapts to every signal it senses, to maximise its energy efficiency. Crisis can unlock flexibility, but it doesn't sustain it.

Ways of working that weather uncertainty are the ones that stop treating adaptability as an exception, and start treating it as how work happens when there is no stable ground to return to.

Structure, Decision-Making & Governance

What breaks under pressure

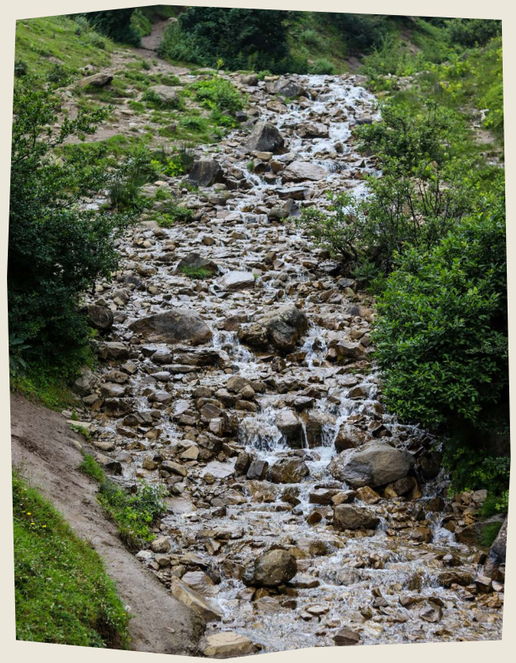
In any system, stress, like water, travels along the weakest joints, seeking out points of failure. In organisations, these joints are usually decision-making and governance structures. When pressure builds, uncertainty doesn't spread evenly. It pools where authority is unclear, duplicated, or over-centralised.

'In any system, stress, like water, travels along the weakest joints, seeking out points of failure.'

What follows isn't collapse, but a slow, painful drag. Responsibility drifts upwards, not because senior leaders want control, but because risk feels too exposed lower down. Governance designed to create clarity, often under the weight of trustee responsibility and external accountability, starts doing the opposite. It multiplies checkpoints, meetings, and escalation paths in an attempt to contain uncertainty and manage risk.

The result is a familiar pattern: people spend more time preparing decisions than making them. Issues circulate without resolution, pressure concentrates on a small number of individuals. The system keeps functioning, but only by slowing itself down.

Ecologically, this is what happens when a system loses its capacity to distribute load. Stress doesn't disappear. It just finds the points that can't flex.



What to notice early

In living systems, structural failure rarely announces itself with fanfare. Long before the Jenga tower collapses, there are indicators that the topple is imminent. In organisations, early signs tend to look operational rather than strategic, which is why they're easy to dismiss:

- Decisions default upwards, even when nothing about the situation actually warrants it
- The same issue doing the rounds in three or four different forums, with no decisions made
- Boards and leadership spending more time checking risk than setting direction
- People get halfway through the work before realising that no one owns the final decision
- Discussion happening in the side chat, on Teams or Slack, because the 'official' route slows things down, isolating out certain individuals.

None of this means people are careless or avoiding responsibility. It usually means the system has stopped making it easy to decide well, so people work around it instead.

What to design for

Under pressure, governance either helps decisions move, or becomes the thing they get stuck on. In practice, that means designing governance around:

- Clear decision boundaries, so people know what they can decide without escalation, even when outcomes are uncertain
- Distributed authority, where risk is shared rather than concentrated in a handful of roles or committees
- Explicit thresholds, where certain signals automatically trigger collective review, instead of relying on individual courage to escalate
- Lightweight coordination, focused on enabling action rather than policing compliance
- Shared memory, so past decisions, rationales, and trade-offs remain visible rather than living in people's heads.

This mirrors what we see in resilient ecological systems. Mycelial networks don't route everything through a single node. Stress is redistributed. Alternatives are created before failure becomes catastrophic. Octopuses push autonomy to the edges to create faster responses and avoid overloading central control.

Good governance works the same way. It doesn't prevent uncertainty. It prevents uncertainty from turning into paralysis. The test isn't whether your structures feel robust in calm conditions. It's whether they still allow decisions to happen when the ground is shifting, without burning out the people holding them together.

Performance, Prioritisation & Adaptation

What breaks under pressure

Most performance measures are built for stable conditions. Targets are set on the assumption that the path to growth is linear. KPIs assume that progress can be compared month to month, and through an annual lens of seasonality. Growth (that strategy staple of 'double income in ten-years') is treated as the sector's default setting.

And when the world changes, and those assumptions fail, the system doesn't adapt. It doubles down on process. L&D budgets disappear as a quick way to save, with no view on the long-term implications for talent or retention. Investment is paused, reduced or binned entirely in the hope of returning when 'normal' resumes. And frontline teams aren't immune from cuts. The 'do more with less' mantra extends across the org chart.

What's rarely questioned is whether the measures themselves still make sense. Performance becomes something to defend rather than something to learn from. Evidence is used to justify continuation, not to support change.

Living systems don't behave like this. When conditions change, they don't try to perform at the same rate regardless. Trees don't push for growth during drought, they slow down, they draw on reserves, and they adjust their behaviour to survive the period they're in, not the one they wish they were back in.

Performance systems that can't do that don't just misread reality. They actively make adaptation harder.

What to notice early

In adaptive systems, performance data shifts roles when conditions change. It stops acting like a scorecard and starts behaving like a sensor. Early warning signs show up when that shift doesn't happen.

Common signals include:

- Things are technically "on track", but only because people are bending themselves backwards to keep them there
- Performance meetings are about defending why something didn't quite work, not about figuring out what to change next
- You're still measuring the same things, even though everyone knows they no longer reflect what's actually happening
- Data turns up after the decision's already been made, so it's used to justify choices rather than inform them.

These aren't signs of poor management. They're signs that the organisation is absorbing change through people rather than through its performance framework.

What to design for

In nature, systems don't perform to fixed targets regardless of conditions. They adjust pace, draw on reserves, and prioritise survival over growth. Organisations need to do the same. Systems that hold under uncertainty are designed around:

- Adaptive measures that flex with the reality of the situation
- Lead indicators that look at stress and capacity as much as output
- Clear priorities that are agreed, shared and revisited: the North Star
- Performance conversations that are less a post-mortem, and more about learning and adaptation, not blame
- Permission to pause or slow down in order to protect capacity and capability, before the system breaks.

When conditions change, performance frameworks either adapt or become part of the strain. What you choose to measure, prioritise, and pause decides whether the system learns or burns through what little capacity it has left.

GOOD FUTURES
FROM GOOD INNOVATION

FIND OUT MORE ABOUT GOOD FUTURES

GET IN TOUCH FOR A COFFEE

Written by Daisy O'Reilly-Weinstock
and Ef Leurs

Designed by Coralie Zimmerman