ASIAN Management Insights

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Resilience in a Permanent Storm

Amidst constant disruption and uncertainty, organisations must cultivate the capacity to adapt to be truly resilient


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Resilience is not a single capability to be acquired once, but a discipline to be continually practised.

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FROM THE EDITOR

Building Resilience

Asia is being tested from every direction at once. Climate shocks are intensifying, inequality is widening and geopolitical rivalries are hardening into blocs. Cities are urbanising faster than their infrastructure can keep up, and technological change—sharpened by artificial intelligence—is compressing the time leaders have to adjust. None of these pressures are new in isolation. What is new is their simultaneity. Leaders can no longer treat them as episodic disruptions to be weathered before returning to business as usual. That old assumption—that stability is the default condition, and disruption merely an interruption of it—no longer holds.

The idea of resilience is not new, even if the debate feels unprecedented. The term entered systems thinking in the early 1970s, via ecologist C.S. Holling's distinction: engineering resilience as a system snapping back to its original state; ecological resilience as a system absorbing disturbance by reorganising into something new. Debate ratcheted up again after the 2008 financial crisis and post-9/11 security anxieties, as governments and central banks began speaking of resilient *institutions*. Nassim Nicholas Taleb's *Antifragile*, published in 2012, pushed the conversation furthest, arguing that merely withstanding shocks was too modest a goal—some systems actually improve under stress. A parallel debate unfolded closer to home, where grit reframed personal perseverance as resilience's individual face. That provocation shadows this issue: several contributors remain uneasy with older, static definitions of resilience as simply bouncing back. This is why resilience has become the defining leadership challenge of the moment.

Resilience, as several contributors remind us, is not simply the capacity to withstand shocks and return to an original shape. It is a more demanding, more active capability. It rests on three linked disciplines: anticipating disruption before it arrives, preparing deliberately for it and adapting continuously as conditions change. Long-term resilience cannot be built by any single actor; it depends on sustained coordination across businesses, governments and communities.

Anticipation is the first discipline. It begins with recognising how fundamentally the environment itself has shifted. As Arnoud de Meyer argues in Vantage Point, the disruptive forces reshaping the corporate landscape are not passing disturbances, but rather structural features of a permanently unstable system. Resilience, he suggests, means abandoning the old metaphor of the elastic band that snaps back to its original shape, in favour of organisations capable of continuous rearrangement without losing coherence or purpose. Jack McGuire's In Motion column extends this logic, using organisational adoption of artificial intelligence to illustrate. Before a system goes live, he argues, leaders must anticipate its social meaning as much as its technical performance—not only how the system performs, but also how employees respond to its performance.

Preparation is the second discipline. It is where good intentions are converted into practised capability. Keith Fitzgerald's Practitioner's Guide sets out what it means to prepare for crisis rather than merely hope to survive it. That means diagnosing a crisis before acting and building the plans that prevent costly delay. It also means rehearsing behaviours that distinguish productive response from failure. McGuire makes a parallel point about AI: preparation is not training people to click through a checklist, but rehearsing judgement itself. Employees need to learn when to trust a system, when to question it and how to explain decisions shaped by it.

Adaptation is the third discipline: it asks organisations and institutions to treat real-world experience as evidence, not a deviation to be corrected. Sun Sun Lim explores this in the evolution of Singapore's approach to online harms. Policy moved from the early assumption that harm was an individual burden to be endured, through reactive legislation, to today's more anticipatory, victim-centred architecture, culminating in the newly established Online Safety Commission. Susan Chong and Tan Hwee Hoon's research shows adaptation at a more human scale. Supervisor support, they find, turns voluntary, staff-led environmental initiatives into sustained, organisation-wide outcomes—evidence that sustainability strategies must adapt to how people actually behave, not only to what leadership intends. Moreover, adaptation can occur at a sectoral level. This issue's Impact Spotlight shows how Themin Suwardy's practice-led research on audit quality contributed to Singapore's Accounting and Corporate Regulatory Authority's efforts to strengthen the country's audit and financial reporting ecosystem.

Running beneath all three disciplines is a reminder that resilience is ultimately personal before it is institutional. In our At the Helm conversation, Mayor Denise Phua reflects on two decades moving between the corporate, non-profit and public sectors. She locates resilience in clarity of purpose, the willingness to act on what one sees and frameworks for navigating the tensions cross-sector partnerships inevitably bring. Jeremy Lee's account of building SimplyGood makes a related point from the vantage of entrepreneurship. Resilience, he suggests, is often simply the capacity to keep absorbing rejection and failure without losing sight of the value one is trying to create.

Taken together, these contributions suggest that resilience is not a single capability to be acquired once, but a discipline to be continually practised—at every level, from individual to organisation to system. It requires the humility to recognise that disruption is now the operating environment, not an exception to it. It also requires the discipline to keep anticipating, preparing and adapting even when the storm has not yet arrived.

Building resilience is not a project with an end date. It is, increasingly, simply what it means to lead.

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FROM INTENT TO IMPACT

Meaningful change requires more than good intentions. It takes clear purpose, practical discipline and the ability to mobilise others.

Good intentions are abundant. The harder question is what it takes to convert them into outcomes that last. Denise Phua, Mayor of the Central Singapore District, President of the Autism Resource Centre (Singapore) and Co-founder of Pathlight School, has spent two decades answering that question in practice, helping to shape national disability policy, build cross-sector partnerships and lead community programmes at scale. Speaking with editor-in-chief Scott Fritzen, she reflects on how leaders can move from personal conviction to collective action, and from promising ideas to outcomes that endure.

Looking back at your wide-ranging journey across corporate, non-profit and public sectors, what does the concept of resilience mean to you, personally and professionally?

Resilience is often defined as the ability to withstand challenges and to pick oneself up after setbacks. That is a definition that resonates with me. But the strength of one's resilience is grounded in one's sense of purpose and clarity of objectives. As the saying goes, "without purpose or vision, men shall perish."

I believe resilience can also occur at a national level. When Singapore became independent in 1965, our forefathers rallied people to stay resilient and persevere in building our nation despite our lack of resources. We saw something similar in spirit during the SARS epidemic and COVID-19 pandemic, when our national leaders encouraged people to stand together and overcome those challenges.

Many may come to think of Singapore as a highly resilient society on both individual and national levels. But throughout my work, I see resilience at both family and community levels as well—families from disadvantaged backgrounds that rise against all odds and become successful, not only in the conventional sense, but also in uplifting the people around them.

How has your personal experience with the special needs community shaped the way you think about impact and leadership?

I firmly believe that nothing happens by accident, and that prior experience can be drawn upon to make a real difference. During my time in the infotech industry, working as a corporate executive in companies such as Hewlett-Packard, my son was diagnosed with autism. Like many parents, I moved through a series of difficult emotions, including denial, anger and grief. As I was thrust into the world of special needs, I met several families in similar circumstances, some of whom were faced with even greater hardships. Through those conversations, I discovered a clear gap—a social injustice that needed to be addressed.

At first, I did what many Singaporeans would do: I wrote to our government and the media, telling them what should be done to better support the special needs community. But it soon became evident that, in order to effect change, I needed to be part of the solution—and so I became one. I brought the skills and experience from my corporate career into the non-profit sector, where I helped establish two special needs schools and became one of the architects of three Enabling Masterplans for disability inclusion in Singapore. Driven by a belief that I could shape policies and help direct resources to those who were most vulnerable, I joined politics as an MP for the Jalan Besar GRC and later became Mayor of the Central Singapore District.

Looking back, there are three principles that emerge from this experience. The first is the power of one, where even the smallest act of kindness can leave a lasting impact. If you cannot feed a thousand people, start by feeding one. The second is the power of others, to harness others' strengths to reach greater heights. In the words of a familiar saying, "if you want to go fast, go alone. If you want to go far, go together." The third is to always be part of the solution—to work within your circle of influence rather than being overly concerned about your circle of concerns. All of us have concerns, things over which we may not have control. But there is always a circle where we do have influence and where we can make a difference.

What does impact actually look like on the ground—and how do you know when something is truly making a difference?

Many in the corporate sector would be familiar with performance dashboards and process indicators. In public service, a similar set of indicators is used to assess the impact of our initiatives—namely, output indicators, outcome indicators and impact indicators. The indicators we track are determined by the type of programme, the target audience and the resources available to us.

The Purple Parade, one of the Central CDC's largest projects, illustrates this well. It is a movement that supports inclusion and celebrates the abilities of Persons with Disabilities (PWDs). We partner with over 200 corporate leaders and nearly 50 disability organisations for our annual marquee event. One possible output indicator is the number of people that participate in the event. For outcome indicators, we may examine how many attendees went on to engage meaningfully with PWDs. An impact indicator would be a measurable increase in public awareness and inclusion of PWDs.

However, not all initiatives have a clear pathway to impact. Our work with students from institutes of higher learning, for example, involves cleaning the homes of vulnerable seniors. The outputs and outcomes can be measured, but the initiative may not lead to broader societal impact. In that sense, one must be realistic about impact and measurements—not everything that counts can be measured, and not everything that is measured really counts.

How do you navigate the challenge of engaging multiple sectors and actors in society to try to achieve your desired outcomes and impacts?

For organisations such as the CDC, working with partners from various sectors is necessary to carry out

It soon became evident that, in order to effect change, I needed to be part of the solution—and so I became one.

its objectives. To enable more effective partnerships, there are a few prerequisites.

The first is having a shared vision and values. The giraffe is the Central CDC's mascot for good reason: with its long neck, it can look out beyond itself and encourage the common good. Ensuring that potential partners share this vision is critical in establishing that all parties are working towards the same objective.

The second is diversity. Where a shared vision aligns interests, diversity brings different perspectives and strengths into the partnership. It is what allows groups to find solutions to achieve that shared vision—which, to me, is what synergy really means.

The third is clarity in the desired outcomes. With a common goal and a range of capabilities, determining the outcomes that you and your partners want to achieve provides guidance and direction. The CDC Vouchers programme is one example: organisations such as the Ministry of Finance, GovTech and the People's Association came together successfully with our CDCs because the outcome was clear and the goal was shared. As the Cheshire Cat says in Lewis Carroll's *Alice in Wonderland*, if you don't know where you are heading, it doesn't matter which way you go.

Could you walk us through one initiative that shows how an idea moves from good intent to real outcomes?

When I first started volunteering in the special needs sector, I noticed a clear gap in the education landscape: students on the autism spectrum who were cognitively able to access mainstream academics did not have a suitable learning pathway. Neither the typical special school nor the typical mainstream school was the right fit. A small group of parent and professional volunteers got together around the idea of setting up a school like no other, one that was designed specifically for these students and built around their needs and abilities.

We developed this idea further and presented it to various stakeholders, including the Ministry of Education and potential donors, to share the vision and make the case for why such a school was needed. The long and short of it is that we had to convince people, and convince them to part with their resources and give us their support. Pathlight School, now Singapore's largest special school, is the outcome of that effort. From 42 students at founding, it has grown to about 2,200—seeded from a small idea, and now a reality.

How do you think about scalability and the challenge of scaling in impact work?

Scalability may not be the objective of every project—nor should it be. I have observed many instances of neighbours helping one another, and that single interaction, that impact on one family, matters. When the focus is on systems that kind of intentional one-to-one connection can get overlooked. There are unsung heroes on the ground making a difference every day, even if the word "scalability" is not in their vocabulary. To me, that is important enough.

Scalability comes in when there is a goal to embed an initiative within a broader system to improve the lives of many. A key first step in scaling impact work is piloting the initiative, to ensure that it creates the desired outcomes for its target beneficiaries at its smallest scale. It can then be unpacked and shaped into a formula that can be replicated. From there, the right tools make the difference—developing playbooks, building in ongoing training and capability-building, establishing systems by which one can audit results and bringing in technology where it adds value. There are many tools that can be used to ensure an initiative is scalable, but they only matter if scalability is the objective.

Cross-sector partnerships often bring competing priorities and tensions. As a leader, how do you work through them?

My approach to navigating those tensions can be expressed in four C's. The first is Clarity. When working with different partners, there is often a lack of clarity regarding the goals they wish to achieve. As Stephen Covey, author of *The Seven Habits of Highly Effective People*, once said, "the main thing is to keep the main thing the main thing." The objectives of each party must be clearly defined to establish a common understanding.

There are many tools that can be used to ensure an initiative is scalable, but they only matter if scalability is the objective.

That common understanding can be gained by holding Crucial Conversations with partners. Simply agreeing to work towards a common goal is insufficient; there must be a collective agreement on the desired outcomes, the steps required to reach those outcomes and ways of measuring progress.

As partners come from different sectors, each of them will bring their own distinct agendas and priorities to the table. It is critical to have both Courage and Consideration during these conversations: the courage to speak up for your own priorities, as well as consideration for the needs of others. Striking that balance between courage and consideration is what reduces misunderstandings and tensions, and it requires constant calibration.

What advice or guiding principles could you share for those that seek to drive meaningful change and have an impact?

I live by a change management framework called the four 'A' model: Awareness, Affiliation, Action and Advocacy. The first step towards effecting change is building Awareness of the initiative's purpose and the gaps it seeks to address. To rally people to your cause, a positive Affiliation needs to be formed to connect individuals meaningfully to the initiative. After building an affiliation, you must take Action, being clear about what steps will bring about the change you wish to make. The highest level is Advocacy, when others cross over and champion the cause alongside you.

Another set of principles that I find useful is the TOP model: Talent, Others and Passion. Talent and Passion involve identifying what you are good at, and love respectively. Through your skills and passions, how can you help to fulfil the needs of Others? That intersection between Talent, Others and Passion—which I call 'service best'—represents the best place that you can serve, allowing you to fully harness your strengths and passions to support those around you.

For me, that intersection has been the combination of my management and leadership background, my passion for working with people and the needs of the communities I serve. I feel fortunate to have found that place of 'service best' at various points in my career, and I hope to continue doing so.

by
Arnoud de Meyer

RESILIENCE IN A PERMANENT STORM

In an era of constant disruption and uncertainty, organisations must cultivate the capacity to adapt if they are to become truly resilient.

- *Resilience once meant withstanding pressure and restoring operations after disruption. Today, it increasingly depends on an organisation's capacity to adapt in a highly volatile environment.*

- *In the relentless pursuit of optimisation, organisations risk eliminating the buffers and safeguards that protect them from shocks.*

- *Leaders must move from shaping decisions to shaping the environments that enable organisations to build adaptiveness.*

For much of the past fifty years, corporate stewardship proceeded under a largely unwritten, deeply comforting set of assumptions: while acute disruptions—a sudden currency crash, a cyber-attack, a regional conflict—would inevitably punctuate the business cycle, stability remained the baseline condition. Beneath these disturbances lay a powerful implicit belief that stability would eventually return after the disruption: economic cycles would normalise, markets would settle, institutions would regain their balance and globalisation would continue to dominate. Disruption was temporary; equilibrium was permanent. The goal of management was to ride out the turbulence and safely steer the ship back into the calm waters of the known status quo.

Today, that foundational assumption has collapsed.

The modern corporate landscape is no longer experiencing temporary, isolated disturbances around a stable equilibrium. Instead, those disturbances have combined, intensified and accelerated to form the environment itself. The forces driving this shift are structural, interconnected and irreversible:

- **Geopolitical Fragmentation:** The smooth, flat world promised at the end of the Cold War has fractured into defensive economic blocs, proxy conflicts and regulatory balkanisation.
- **Technological Acceleration and Disconnection:** Generative and agentic artificial intelligence and automation are altering the shelf-life of products, skills required and business models at such a pace that initial capital expenditures can barely be depreciated. Additionally, we see a growing divergence and competition between the coalitions around the US and China, leading to incompatibility.
- **Environmental Pressures:** Climate disruption is moving from a line-item in corporate social responsibility reports to a real and visceral liability affecting physical assets, insurance premium viability and real-time resource availability.
- **Demographic Transitions:** Ageing workforces in virtually all developed economies, particularly in East Asia, alongside shifting labour expectations are fundamentally rewiring talent pools and consumer markets.

For generations, management education and corporate leadership were built around a specific toolkit: prediction, long-range planning, hyper-optimisation and centralised control. The dominant managerial ideal was efficiency: gathering sufficient information to forecast the future accurately and allocate resources with maximum precision. Strategic planning assumed that uncertainty could largely be reduced to calculable risk. Organisations were designed to minimise variation, standardise operations and eliminate redundancy.

Yet leaders today increasingly confront uncertainties that cannot be modelled with confidence. Nassim Nicholas Taleb famously described such events as "Black Swans"—rare, high-impact occurrences that become explainable only in retrospect. But contemporary business conditions suggest something even more challenging: uncertainty itself has become structural rather than exceptional. Organisations should no longer be preparing for occasional disruptions, for they are operating within a permanently unstable system.

Calculable risk can be managed with an insurance policy or a hedged derivative; it belongs to a universe where the probabilities of future outcomes are known. But true uncertainty, or "unknown unknowns" as I have described elsewhere, defies computation. When the variables themselves are constantly mutating, the traditional playbook of prediction and control becomes worse than useless—it may become a source of systemic vulnerability.

To survive, institutions must abandon the illusion of permanence and consciously construct a different asset class: organisational resilience.

REDEFINING RESILIENCE

The classical understanding of resilience emerged largely from engineering and systems theory. A resilient bridge, machine or infrastructure system could absorb stress and return to its original state. Much corporate thinking still reflects this logic: the resilient company is one that survives disruption and restores normal operations quickly. It is not unlike an elastic band—stretched by a crisis but possessing the tensile strength to snap back to its original shape.

Yet, the defining feature of contemporary uncertainty is that the original shape may no longer be viable. The ground beneath the organisation has shifted so fundamentally that returning to the old equilibrium may well be a recipe for irrelevance or obsolescence. True resilience is not a defensive crouch; it is a dynamic capacity.

The old definition of resilience was about robustness; the modern definition is about adaptiveness. Truly resilient institutions are not those that successfully resist change, but those capable of continuous internal rearrangement without losing their core coherence or overarching sense of purpose.

This distinction transforms resilience from a reactive crisis management function into an active, everyday operational stance.

For a corporation, non-profit organisation or public agency, this means developing the capacity to pivot strategies, reallocate capital and redesign workflows in real time. The goal is to achieve a state of fluid continuity: preserving the institutional identity and the "why" of the enterprise, while remaining utterly unsentimental about the "how".

DESIGNING THE ADAPTIVE ORGANISATION

If the traditional organisation is a machine designed for a specific factory floor, the adaptive organisation is a living network designed to navigate a shifting jungle. What do these adaptive structures do differently? To observe them in practice is to witness a departure from standard twentieth-century management orthodoxies.

Distributed Intelligence and Decentralised Action

In a highly volatile environment, information quickly becomes stale as it travels up a steep corporate hierarchy, and instructions are frequently obsolete by the time they filter back down to the front lines. Adaptive organisations solve this by decoupling decision-making from formal hierarchy, distributing intelligence to the periphery where the organisation directly interacts with reality.

This decentralised philosophy is guided by a powerful, unyielding central ethos. Frontline teams do not operate in a vacuum; they are bound by a shared strategic intent and a clear set of core principles. This allows for what is known in the military as "mission command", executing localised, highly autonomous actions that align with

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the broader corporate goal without requiring explicit permission for every tactical adjustment.

This model can become essential whenever a central command structure risks being cut off, jammed, or simply too slow to keep pace with fast-moving, on-the-ground conditions. Autonomous units are bound not by a real-time communications loop, but by a shared understanding of intent. If the centre goes dark, they know exactly what the mission is and how to execute it within their local context. In the corporate arena, this translates to empowering local country managers, frontline engineers or product teams to make definitive calls based on immediate data, secure in the knowledge that they are operating within a well-understood institutional framework.

Promoting Institutional Memory

In a world characterised by high employee turnover and rapid strategic shifts, organisations frequently suffer from collective amnesia. They make the same mistakes every few quarters because the lessons of past crises were tied to individual people rather than embedded in the organisational architecture. Experience is sometimes treated as a liability rather than an asset, yet organisations that lose historical memory often lose contextual judgement as well.

During the 2008 global financial crisis, many institutions rediscovered risks that previous generations of bankers had understood well, but which had gradually faded from organisational memory. The same pattern emerged during the COVID-19 pandemic: many governments and companies alike lacked the institutional knowledge required to manage large-scale systemic disruptions, because decades of relative stability had eroded preparedness.

Adaptive enterprises treat institutional memory as a living asset. They build systematic mechanisms—rigorous post-mortems, accessible knowledge repositories and cross-generational mentoring structures—to ensure that hard-won operational insights are codified and distributed. Every disruption is treated not just as a cost, but as a paid education—one they are committed to learning from.

Leadership Humility

The myth of the all-knowing executive who diagnoses every problem from a top floor corner office is dead. In an era of intense technological and systemic complexity, adaptive organisations require leaders who possess the humility to acknowledge what they do not know.

Humility at the top creates psychological safety throughout the organisation. When leaders admit uncertainty, it signals to the rest of the enterprise that it is safe to report unpleasant truths, surface hidden risks and challenge legacy assumptions before they turn into catastrophic failures.

Constant Experimentation and Rapid Learning

Instead of betting the entire company's future on a single, massive five-year plan, adaptive organisations operate via a portfolio of small, controlled experiments. They launch minimum viable products, test new supply routes and pilot alternative workflows in isolated markets.

The goal is to fail cheaply and learn quickly. By lowering the cost of experimentation, they turn learning into a continuous, low-risk habit rather than a high-stakes gamble. Organisations must also develop the ability to distribute the positive learnings quickly throughout the enterprise.

Constructing business ecosystems to share risks and assets

Resilience also requires diversity. Homogeneous systems optimise easily but adapt poorly. Diverse supply chains, diverse leadership perspectives and diverse organisational capabilities provide flexibility under changing conditions. Ecologists have long understood that ecosystems with greater diversity tend to display higher resilience. Organisations increasingly face similar realities. In the book *Ecosystem Edge: Sustaining competitiveness in the face of disruption*, my co-author, P.J. Williamson, and I argued that competitive strength will be based on companies' capability to develop business ecosystems that can combine their assets and competencies to produce value for the ultimate customer. Business ecosystems provide organisations with the flexibility to scale up when opportunities arise and have enabled a number of Chinese technology-based firms in retail, finance and electric vehicle assembly to scale rapidly.

THE PERILS OF PERFECT OPTIMISATION

For the past three decades, corporate boardrooms were wholly committed to the pursuit of efficiency—

a pursuit which I, too, am guilty of teaching in my operations management classes on lean operations. Guided by the tenets of Six Sigma, lean manufacturing, just-in-time inventory management and aggressive financialisation, executives stripped every ounce of "waste" from their systems. Warehouses were replaced by real-time logistics streams, redundant factories shuttered or consolidated, and supply chains stretched across continents to capture the lowest possible labour costs, with components crossing multiple borders before final assembly.

This system functioned remarkably well—until it didn't.

On paper, during periods of geopolitical calm and predictable economic growth, this optimisation was a financial masterstroke. It lowered overhead, maximised short-term return on capital, boosted quarterly margins and delighted Wall Street.

But it did something else that went largely unnoticed: it systematically stripped away the structural dampeners that protect a system from shock. It turned resilient, flexible networks into brittle glass.

The pursuit of hyper-efficiency operates on the flawed assumption that the future will behave exactly like the immediate past. When you eliminate all excess capacity, you are betting everything on perfect operational continuity. If a single link in that highly optimised, hyper-connected chain fails, the entire system grinds to a halt.

The financialisation of the corporate world further compounded this vulnerability. Cash reserves were deployed for share buybacks rather than balance sheet strength; capital expenditure was squeezed to present a leaner profile to investors. The result was a corporate ecosystem filled with elite athletes possessing zero body fat—exquisitely tuned for a smooth indoor track, but entirely incapable of surviving a night in the jungle.

REINTRODUCING THE ARCHITECTURE OF SURVIVAL

The early 2020s delivered a brutal, systemic lesson in the dangers of over-optimisation. The cascading disruptions of the COVID-19 pandemic revealed that global supply networks were so tightly coupled that a factory shutdown in one Chinese province or labour shortage in a Chinese port could freeze automotive assembly lines in Europe for weeks.

Subsequent geopolitical flashpoints have hammered home this reality. The recurring instability surrounding chokepoints such as the Strait of Hormuz, and the weaponisation of critical shipping lanes more broadly, have demonstrated that geography still matters. Physical vulnerabilities cannot be fully engineered away by digital dashboards.

These realisations have forced a slow, painful reappraisal of institutional design. True resilience requires the deliberate, often expensive reintroduction of architectural features that the previous generation of managers spent their careers eliminating:

- **Redundancy**: Having a single, low-cost supplier for a vital component is efficient; having three suppliers across different geographies is resilient. Keeping inventory close to the end consumer may incur additional costs, but it prevents stockouts when shipping lanes are disrupted. Redundancy is the insurance premium an organisation pays to improve its chances of survival.
- **Diversity:** Resilient systems do not rely on a single piece of technology, a single market or a uniform profile of thinking. They cultivate diverse revenue streams, energy inputs and cognitive perspectives within leadership teams to ensure they are not blinded by collective groupthink when a novel crisis emerges.
- **Decentralisation:** By breaking monolithic corporate structures into smaller, modular units, organisations can contain and minimise damage. If one division or regional hub is compromised by a cyberattack or geopolitical crisis, the remaining units can isolate the infection and continue operating, preventing total system failure.
- **Time for Reflection:** In an always-on, hyper-connected business environment, executives are caught in a relentless cycle of reactive firefighting. They jump from one urgent WhatsApp message to the next, with no cognitive bandwidth left to analyse structural trends or anticipate incoming disruptions. Adaptive organisations dedicate time for strategic reflection, treating deep thought not as an idle luxury but as a critical risk-mitigation discipline. Organisations unable to pause, reassess assumptions and reconsider strategic direction gradually lose the ability to evolve intelligently.

The shift may be described as one from "just-in-time" to "just-in-case": the organisations that thrive in the next era may not be the most optimised, but the most adaptable.

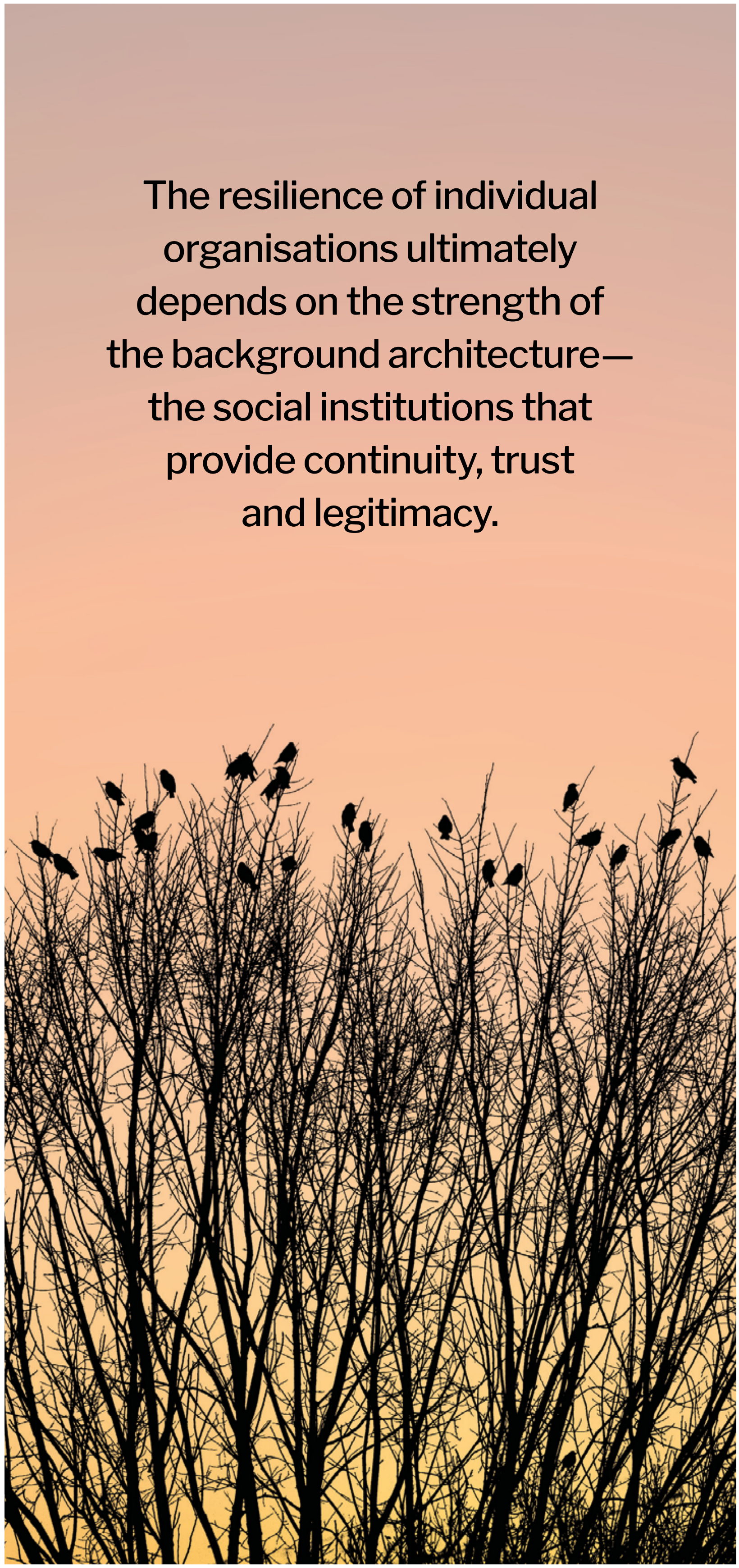
THE INSTITUTIONAL SCAFFOLD

Organisations do not exist in a vacuum. A corporation cannot be truly resilient if the society surrounding it is fracturing, and an enterprise cannot plan if the broader legal and regulatory environment is unstable.

The resilience of individual organisations ultimately depends on the strength of the background architecture—the social institutions that provide continuity, trust and legitimacy.

When public institutions, regulatory agencies and legal frameworks function effectively, they provide a reliable foundation of predictability. They ensure that contracts are enforced, infrastructure is maintained and public data remains trustworthy. This institutional stability creates social capital—the invisible glue of trust that allows businesses to transact, invest and cooperate during periods of intense market stress.

When that background framework degrades—whether through political polarisation, systemic corruption or institutional drift—the cost of doing business rises exponentially. Organisations are forced to spend enormous amounts of energy building their own private security, verification and compliance mechanisms. In a time of pervasive uncertainty,


The resilience of individual organisations ultimately depends on the strength of the background architecture—the social institutions that provide continuity, trust and legitimacy.

preserving the health, integrity and legitimacy of these foundational public institutions is not a soft, altruistic endeavour. It is a hardheaded economic necessity for any organisation that hopes to survive over a multi-decade horizon.

THE NEW MECHANICS OF LEADERSHIP

As the environment mutates, the nature of corporate command must change with it. Modern organisations operate in systems so technologically, logistically and institutionally complex that the traditional model of the lonely CEO at the top is obsolete. No single individual, no matter how brilliant or energetic, can genuinely comprehend the entirety of a global corporate system or predict the interactions of its moving parts.

The implication is clear: leadership must shift toward a more sophisticated, distributed art.

The modern leader's role is not to dictate every move, but to design and steward the ecosystem. In other words, the leader shapes not the decisions, but the context in which they are made. This demands three specific capabilities:

1. **Interpretation:** The leader acts as an institutional translator, filtering through the noise of a chaotic world to identify the signals that genuinely matter. They help the organisation make sense of its environment, contextualising sudden disruptions so the workforce can react with focus rather than panic.
2. **Orchestration:** Instead of managing line items, effective leaders manage interfaces. They connect disparate parts of the enterprise, break down internal silos and ensure that information, resources and talent can flow rapidly to where they are needed most.
3. **Trust-Building and Collective Intelligence:** The ultimate task of the modern executive is to build a high-trust culture that unlocks the collective intelligence of the entire workforce. They create an environment where insights are shared freely, where frontline workers feel safe making autonomous decisions, and where the organisation's collective capacity to learn moves faster than the external environment's capacity to disrupt.

The era of management as an exercise in elegant engineering is over. The leaders who succeed in this uncharted territory will not be those who build the most rigid, optimised fortresses, but those who learn to conduct a living, evolving orchestra amid the noise of a permanent storm. AMI

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HOW INSTITUTIONS LEARN TO BECOME MORE RESILIENT

Resilient institutions do more than respond to disruption. They build capacity to learn, question assumptions and change course while decisions can still make a difference.

Dr Emmanuel Y Jimenez, Director General of the Independent Evaluation Department at the Asian Development Bank (ADB), reflects on what decades of evaluation have taught multilateral development banks about turning evidence into action.

Resilience has become a central concern for institutions in development, business, government and beyond. But the concept is often better stated than practised. From your experience assessing whether large institutions are delivering on what they set out to do, what does genuine resilience demand of an organisation?

Genuine resilience depends on capacities built before a crisis occurs. For multilateral development banks (MDBs), this means supporting developing member countries to prevent and mitigate shocks, not only responding once a crisis has begun. It also requires MDBs themselves to work across internal silos. This is especially important for regional institutions such as ADB, which operates across countries exposed to economic, natural and health-related disruptions.

Independent evaluations have found that MDBs have generally succeeded in providing timely financial support in response to shocks.[1] Much of this has taken the form of quick-disbursing budget support to central governments, easing balance-of-payment pressures or financing urgently needed public expenditure, including COVID-19 vaccines. MDBs have also developed instruments such as catastrophe bonds, to allow countries to access funds quickly during a shock. Moreover, they have helped countries develop institutions that enable people, especially the poor and vulnerable, to withstand shocks and recover. For example, I was privileged to work with the World Bank team that provided support to Asian countries developing social protection programmes after the 1997-98 Asian financial crisis; these countries were able to reach families more quickly during subsequent natural disasters and the COVID-19 pandemic.

These evaluations offer lessons about what resilience demands. One lesson is that assistance has been more effective in countries with more capable governments, underlining the importance of strengthening institutional capacity, especially during non-crisis periods. This is not always easy: immediate needs can crowd out longer-term but potentially more consequential measures, such as institutional reform.

A second lesson is the importance of coherence, both within an institution and across its partnerships. During crises, working across bureaucratic silos and allowing flexibility in institutional procedures have been essential to providing timely and effective support. Alignment with other development partners also matters. In Myanmar and Afghanistan, for example, when ADB could no longer work directly with the central governments, it partnered with United Nations humanitarian agencies to support education, health and food security. Resilience, in other words, rests not only on resources, but also on an institution's ability to adapt how it works.

Evaluation is often seen as something that happens after the fact. How can institutions bring evaluative thinking earlier into strategy and decision-making, before choices become too entrenched to change?

Bringing evaluative thinking earlier into the programme or project cycle requires institutions to treat learning as part of accountability, not as an alternative to it. Lessons from ex-post evaluations—what worked, what did not and why—can be immensely useful in designing future projects. MDBs such as ADB and the World Bank assess completed operations and document the lessons.

With thousands of completed projects, one challenge is making such evidence easily accessible to the staff designing new operations. Artificial Intelligence is increasingly helping staff review a curated evidence base and retrieve relevant lessons when they are needed. Access alone, however, is not enough. Staff also need incentives to use those lessons. Their deliverable should not simply be a loan; it should be the development impact that the loan helps to produce.

Evaluation should therefore be built into project design from the outset, rather than left solely to independent evaluation units, assessing results after project completion for accountability. Evaluation during project implementation can provide real-time checks on projects, assess whether a project is on track and allow timely adjustments. There is evidence that such monitoring and mid-course correction can significantly improve implementation.[2]

The same principle applies at the institutional level. MDBs evaluate their engagement in sectors and themes as well as major corporate initiatives over seven-to-twelve-year periods. The thematic choice and timing of these evaluations determine whether they can inform operational decisions. ADB, for example, independently assesses the Asian Development Fund, which finances grants to its most vulnerable member countries, before donors consider its replenishment. Evaluative thinking has influence when it is connected to a decision that has yet to be made.

Volume of lending has often been used to indicate MDB performance because it is easy to measure. But it is no longer sufficient as the only measure.

Much of the conversation on resilience focuses on sudden shocks. How can evaluation help institutions recognise slower pressures, such as underperforming programmes, outdated assumptions or strategies that have drifted from their original intent?

Institutions such as MDBs, which promote long-term economic development, are accustomed to slow-burning pressures. Their projects are derived from 5-10 country partnership strategies, which can take 1-3 years for design and approval, followed by another 5-7 years for implementation. By the time it closes and is evaluated, the context and some of the assumptions on which it was based may have changed considerably.

Building evaluation into a project can help an institution recognise these changes before they become entrenched. One research study examined 100 impact evaluations and 1,135 projects approved by the World Bank between 2005 and 2011. It found that projects with impact evaluations avoided common delays and halved the gap between planned and actual disbursements. According to the study, "Evidence-based mid-course corrections, a clearer implementation road map, strengthened capacity on the ground, and observer effects are possible channels to explain the results."[3]

Evaluation must also distinguish between a failure to deliver and a justified change in course. When conditions alter substantially, as they did during the COVID-19 pandemic, outcome targets or implementation schedules may need to change. An ex-post evaluation should examine the validity of the reasons for those changes rather than merely assess a project mechanically against assumptions that no longer hold.

Some interventions also take much longer to produce observable results. It took years of evaluative research, following cohorts through different stages of their lives, to demonstrate the effects of early childhood education on adult outcomes, including further education and career trajectories. That was possible only where monitoring and evaluation systems had been built directly into the programmes. Recognising slower pressures therefore requires both timely feedback and the patience to follow outcomes over the appropriate period.

Many organisations are under pressure—from funders, boards and stakeholders—to demonstrate impact. What are the risks when impact becomes something to be reported rather than something to be learned from?

The volume of lending has often been used as an indicator of MDB performance because it is easy to measure. Volume is important but it is no longer sufficient as the only measure of success. Like many organisations, MDBs are under pressure to demonstrate the development impact of what that lending enables countries to buy. It is no longer enough to get money out the door; they must show that a project has contributed to a changed outcome.

In June 2026, the ADB approved new procedures to strengthen the focus on development impact in the design and implementation of its projects. One risk is that this becomes a "box-ticking exercise", the bane of many a bureaucratic procedure. To guard against that, teams must provide a robust theory of change that identifies and justifies the assumptions linking what is financed to the outcomes promised in their project proposals. This should make it easier to evaluate not only whether a project achieved the desired result, but why it did and did not.

A second risk concerns the relevance of the indicator being reported. In any large organisation, stakeholders may differ over which results matter most. At the corporate level, organisations understandably want a limited set of indicators that demonstrate strategic coherence. ADB now tracks 35 main results in its corporate scorecard, compared to 60 three years ago; the World Bank tracks 22 indicators in its corporate scorecard, down from about 150. These measures may be important in aggregate but less relevant in a particular country. A recent ADB evaluation of its engagement with an upper-middle-income country found that teams felt pressure to prioritise indicators that could be aggregated to the corporate level, even though they did not reflect local priorities. When that happens, reporting can displace learning rather than support it.

ADB works across highly varied development contexts in Asia and the Pacific. What have these different contexts revealed about how evaluation needs to be designed, communicated and used?

ADB supports countries where the highest per capita income is about 30 times the lowest, and where the most populous country has around 800,000 times more people than that of the smallest.[4] This diverse context has a significant bearing on how we evaluate corporate, country and subregional strategies. The challenge is to preserve overall coherence while allowing enough flexibility to respond to markedly different needs.

Our evaluation teams have therefore had to develop criteria for effective country differentiation. A recent evaluation of ADB's engagement with its upper-middle-income countries concluded that the institution should move away from offering a common menu of support as countries transition to higher-income status. Its operations should demonstrate clear value in relation to the increasingly complex needs of each country. Alongside its traditional role of lending to governments—which upper-middle-income countries require less of—ADB can provide knowledge services and mobilise private capital.

Context also affects how evaluation is communicated and used. Our department has shifted its approach to evaluation capacity building in the region. Until a few years ago, we supported individuals in learning how to design and conduct evaluations. Many alternatives, including online courses, are now available. We instead offer a learning platform that helps countries build evaluation systems suited to their own institutions and needs. The aim is not to transfer a single model, but to help countries develop systems that can use and sustain.

Independent evaluation needs to be credible, but it also needs to be close enough to decision-making to be useful. How do you balance independence and influence?

MDBs have institutional guardrails to ensure independence, which is required for accountability. At ADB, the Independent Evaluation Department (IED) reports not to the President or management, but to the institution's shareholders through the Board of Directors. Its head serves a single, non-renewable term and is contractually prohibited from subsequently taking up a staff or consulting position with ADB.

To ensure influence, the current mantra of many evaluation units of MDBs like the ADB is "independence but not isolation." It begins with what gets evaluated. The most influential independent evaluations are topical and relevant to decisions facing management. We thus consult extensively with both the Board and management (the evaluee) in developing a three-year rolling work programme.

In this sense, influence is "hardwired" into the process. When management agrees with a recommendation from a major thematic or corporate evaluation, it must prepare and implement an action plan that is monitored and tracked for up to five years. In the past year, about more than two-thirds of actions due for completion had been largely or completely implemented.

Systemic use of evidence requires a stronger culture of evidence-seeking. Institutions need the capacity not only to generate evidence, but also to interpret and use it.

Formal accountability processes are not enough. Independent evaluation should also be seen as useful. One way to do so is to make the evaluations more accessible. At IED, we have worked to make evaluations shorter, more readable and more clearly focussed on their central messages, without losing rigour. We have also developed an AI tool that helps staff retrieve and distil lessons easily when they need them.

Evaluations are also more influential when staff feel they have been developed and presented constructively. A 'gotcha' approach often elicits defensiveness, and learning diminishes. Findings that are clearly explained and well evidenced are more likely to encourage reflection and openness to feedback. Early engagement also helps: I've found that hard messages are easier to absorb if the evaluee is not taken by surprise. Independence protects the credibility of the findings; engagement increases the likelihood that they will be used.

Across your work with the World Bank, 3ie and ADB, do you think large institutions have become better at learning from evaluation? What remains hardest to change?

MDBs have become much better at generating evidence. All of the major ones have independent evaluation departments; in fact, I attend the regular biannual meetings of these departments to ensure coherence in standards and practices. MDBs also conduct increasing numbers of rigorous impact evaluations through their research and analytical work. But while they generate more evidence, it is less clear whether they have become better at learning from it.

Research shows that using evidence to inform project design can lead to better outcomes, while evaluation during implementation can improve delivery. Yet evaluations of the learning ecosystems at ADB and the World Bank show that embedding the systematic use of such evidence in institutional practice remains challenging.

Systemic change requires a stronger culture of evidence-seeking. Institutions need the capacity not only to generate evidence, but also to interpret and use it. More difficult still is creating incentives for staff to seek it out. Generating evidence and incorporating it into business processes takes time and resources. If the findings are taken seriously, they may also raise the standard for what an institution is willing to support. That is difficult when the easiest measure of success (and hardest to forego given the business model of a bank) is still the volume of lending.

For leaders outside the development sector, what does it take to build a culture of evaluation rather than simply an evaluation function? Where should they begin?

One lesson from international development is that a culture of evaluation starts at the top. In MDBs, independent evaluation began because shareholders demanded accountability. But formal requirements alone are not enough. Executive leaders must send a clear message that honest assessment, including evidence of failure or underperformance, is valued and will be acted upon.

Leaders should begin with a diagnosis of both capacity and the incentives. Can the organisation generate and use credible evidence? Do staff feel empowered to speak truth to power? Are they supported or punished when they provide an honest assessment of what works and what does not?

Finally, what gets measured gets done. Leaders should ask whether evaluative evidence is easy to access and whether systems are in place to track how it is used. An evaluation function can produce reports. A culture of evaluation is present only when people across the organisation seek evidence, discuss it openly and use it to make different choices. AMI

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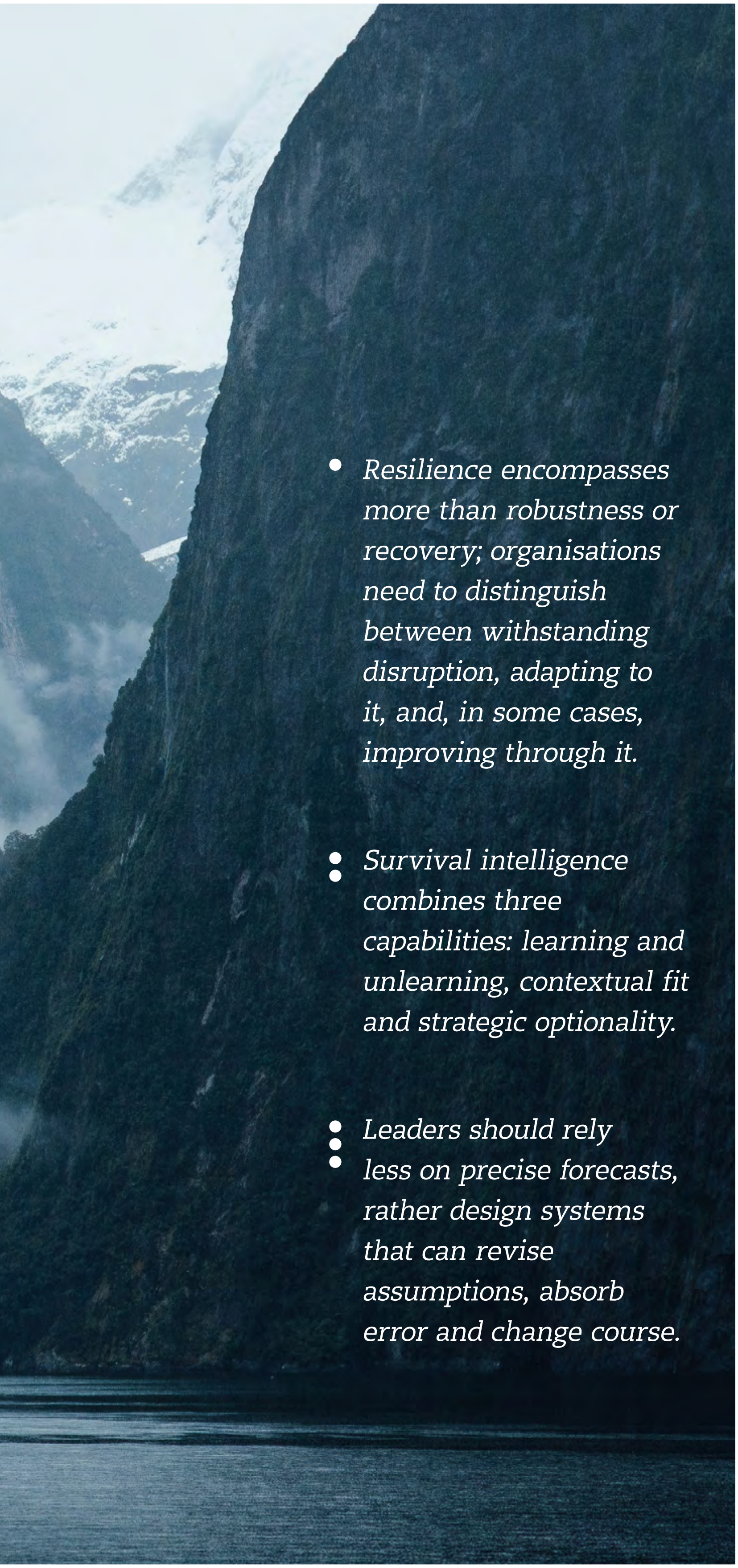
by
Neal Jha

THE EDGE IN NOT KNOWING

Resilience is not about surviving disruption unchanged, but about coming out of it sharper.

Water takes the form that best suits its surroundings.



- *Resilience encompasses more than robustness or recovery; organisations need to distinguish between withstanding disruption, adapting to it, and, in some cases, improving through it.*

- *Survival intelligence combines three capabilities: learning and unlearning, contextual fit and strategic optionality.*

- *Leaders should rely less on precise forecasts, rather design systems that can revise assumptions, absorb error and change course.*

Imagine you are late for a flight, and you tell the driver to take the shortest route to the airport. He does exactly that, but the route turns out jammed with traffic and red lights, so you crawl to the airport and miss the plane. The driver did his job. The route really was the shortest. You simply asked for the wrong thing: you wanted the fastest way there, and you asked for the shortest. The same logic plays out every time governments, boards and management teams ask for “resilient” systems: they get precisely what they *asked* for and then wonder why it is not what they *wanted*.

WHAT RESILIENCE IS NOT

When systems try to predict the unknowable, we get rigidity, not resilience. When something unforeseen arrives, the rigid system breaks like brittle glass. The pandemic exposed how brittle “just-in-time” supply chains were under disruption, pushing many firms towards “just-in-case”.[1] Even robust systems turn brittle in conditions they were not built for. Nokia serves as a literal case in point: its dominance rested in part on its famously indestructible hardware. But when the iPhone arrived, that toughness mattered less than the software ecosystem around it, and its market value soon collapsed.[2] The robustness was real, but not contextually relevant. The shift we need is from assuming controllability to accepting fallibility: from “we know the future and can control it” to “we do not know it and can still thrive in it”.

When you dig into the etymology of grit and robustness, you will find that, beneath the motivational sheen, lies hardness and firmness: the assumption that if you are strong enough, nothing will break you. It is an egotistical position, one that presumes you can predict and control what is coming. Perhaps what we want is not robustness, but agility, flexibility, adaptability. Yet even agility is built around adapting to change, and that quietly assumes we will see the change in time to adapt to it.

ARTICULATING WHAT WE WANT IN RESILIENCE

So, what do leaders and organisations want when they ask for resilience? The underlying desire seems not merely to survive shocks, but to benefit from disruption in some way; rather than simply passing through a storm unscathed, we want to emerge from it better than before.

Think of the stories we tell about resilient people. The protagonist faces hardship and succeeds. But notice what we are actually celebrating: not someone who remained unchanged amid adversity, but someone who came out of it stronger. Not robust, but "antifragile".[3]

Call this capability Survival Intelligence. Not survival as toughness or endurance, and not romanticisation of chaos or disruption. Survival in the sense of thriving: the capability of understanding and harnessing antifragility, of benefitting from the unforeseeable by counterintuitively accepting the unknowability and building around it. Intelligence, after all, also means knowing where your knowledge ends.

Survival Intelligence operates at more than one level simultaneously, because the levels constantly shape one another. What societies normalise, organisations replicate. What organisations expect, individuals internalise. And what individuals practise eventually loops back to reshape the organisations and societies they belong to. The loop runs in both directions, which is why a sincere conversation about resilience cannot happen at any one level alone. Leaders are at the confluence of these levels. Their job is not to perform certainty, but to build conditions in which Survival Intelligence can take hold.

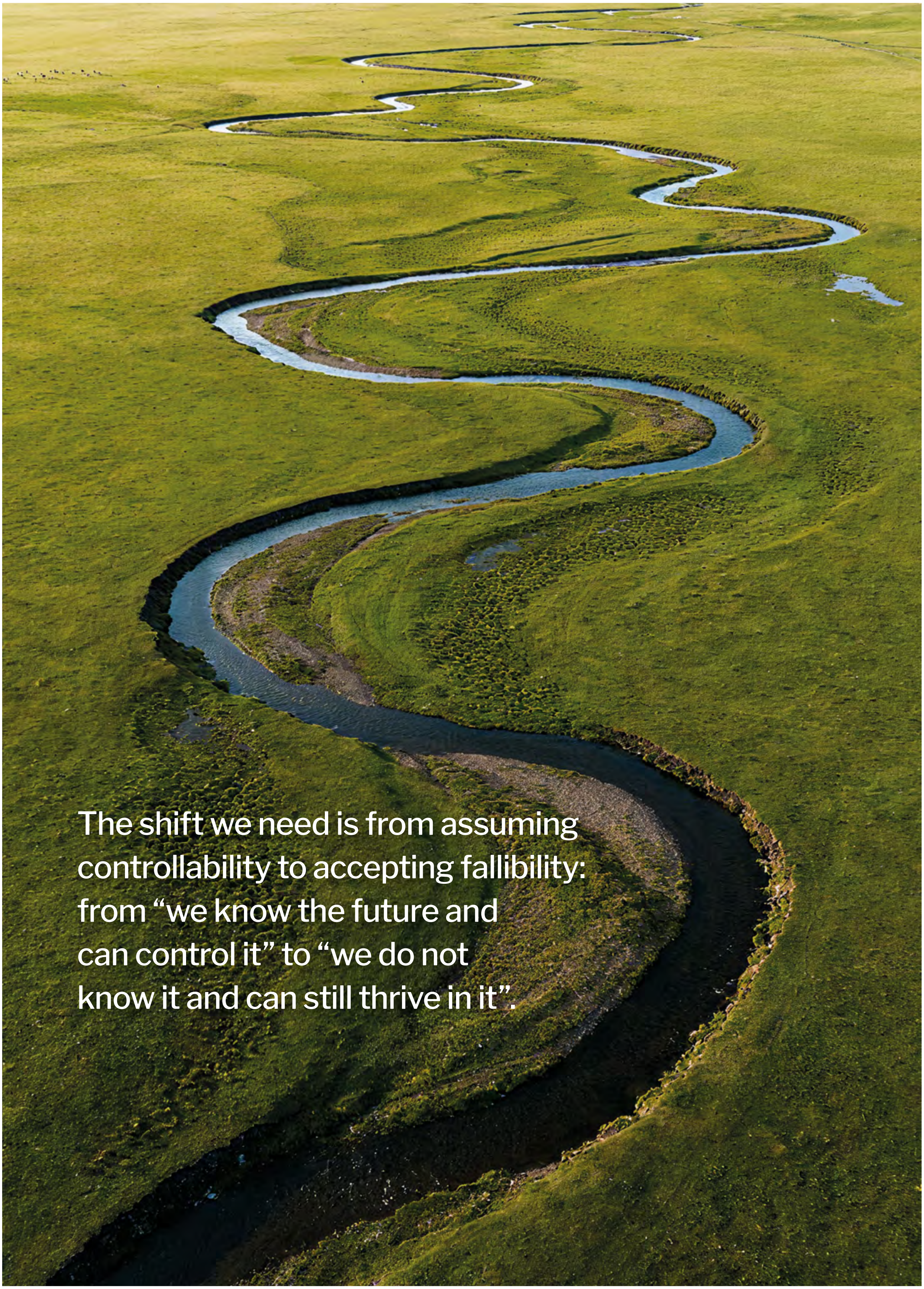
Survival Intelligence rests on three properties. The first is the capacity to learn and unlearn, to update one's map as the territory changes. The second is contextual fit, the alignment between a system and the environment in which it has to work. The third is hedging, keeping enough alternatives to avoid being trapped by a future you cannot foresee.

LEARNING IS THE NEW FLEX

Imagine driving down a fog-covered road at night. Control here does not come from making a brave prediction that nothing will appear in your way. It comes from realising that going slow enough will allow you to see and leave room to react. In an uncertain world, learning and unlearning are the organisational version of that behaviour.

Learning in this sense is not the same as training. Training assumes you know enough about what lies ahead to prepare in advance. Learning, on the other hand, is the discipline of observing what is actually happening and revising assumptions as new information appears. Going slowly enough to observe is learning, and it is the prerequisite for driving through the fog.

Aluminium was once rarer than gold: royalty served their most prized guests on aluminium while everyone else made do with gold plates. Then, chemists worked out how to extract it cheaply, and it moved from royal tables to kitchen foil. Yet mining companies continue to profit substantially from aluminium by processing it into more useful products. Knowledge is now having its aluminium moment. Large language models can retrieve and remix information at a speed no human can match, and raw knowledge is becoming cheaper by the day. Its value is shifting the same way it did for aluminium: from possessing the raw material to processing it, framing the right questions, synthesising across domains, connecting and contextualising what is now cheaply available. Survival Intelligence, in this context, is noticing the shift while it is still unfolding, rather than training everyone around a snapshot of today's tools.



The shift we need is from assuming controllability to accepting fallibility: from “we know the future and can control it” to “we do not know it and can still thrive in it”.

At the individual level, this is the willingness to unlearn. Take George, who, for the past few years, worked relentlessly to build his skills and advance within his organisation, enduring hardship after hardship until it left him depleted. Instead of powering on, however, he did what the old script of resilience forbids: he stopped. He took a break, reconsidered what he was chasing and came back with different priorities, titles mattering less than paying the bills and being present at home. He had unlearned an outdated definition of success and relearned one that fit his current stage of life. That is genuine resilience, and it is easy to mistake it for weakness because it looks like slowing down. Its opposite looks like strength: powering on, never yielding, pushing through. But a script held rigidly long after it has stopped fitting does not bend. It snaps, and by the time it does, there is no slack left to absorb the fall. What looked resilient turned out to have been brittle after all.

Another related example of (un)learning is unfolding before us. Waves of layoffs and restructurings are forcing people to confront how tightly their sense of self is tied to a job title. Losing work not only removes an income; it removes a piece of who you are.[4] The meta-skill of the moment is unlearning the equation of "I am my job", because an identity built entirely on full-time employment is fragile by design.

The same logic extends to organisations. Many "learning" or "agile" organisations are, in practice, training organisations: a new technology appears, and the reflex is to run everyone through a course. That may be useful, but it is still a bet that the skill set being installed will stay relevant. A genuinely learning organisation treats mistakes, near-misses and small failures as information rather than embarrassments to be buried. High-reliability industries such as aviation and nuclear power have long worked this way: an incident is something to study openly, not hide, because the disturbance noticed early is the disaster avoided later.[5]

Learning, therefore, is not a quarterly workshop. It is built into ways of working, debriefs, near-miss reporting and the habit of listening to the people closest to the work, so that shocks become information rather than a final exam.

DESIGNING FOR CONTEXT

There is a Hindi proverb that captures contextual fit well: what a needle can do, a sword cannot. A sword may be more impressive, but it is useless when the task is to stitch torn fabric. The question is not whether a tool is strong in the abstract, but what it is strong for.

Take how we talk about strengths, as though it were a fixed possession you carry intact from one situation to the next. In a negotiation workshop I run for senior professionals, I ask participants to name one strength and one weakness they bring to difficult conversations. What unsettles the room is how often the same trait appears as a strength on one person's list and a weakness on another's. Being highly direct is, for one participant, what cuts through noise; for another, it has cost them a key relationship. Move between cultures and the sorting flips again: the talkative warmth that builds trust in one place can read as insincere in another. The trait is neither. What makes it an asset or a liability is the context in which it lands.

Survival Intelligence is the ability to notice which of your competencies are genuinely portable and which only looked impressive because the old environment was especially favourable to them: compatibility, not dominance, is what Darwin's 'survival of the fittest' was always about. It is why many competent individuals struggle to find their footing amid disruption. Often nothing is broken; the context has merely changed, and the old tools no longer fit it.

At the organisational level, this involves employing strategies appropriate to the environment in which it operates. What works elsewhere may still be useful, but 'best practice' is only the starting hypothesis until it has been tested against context. When IKEA faced child-labour allegations in its carpet supply chain in India, the decisive-looking moves were to cut off suppliers or mandate blanket certification.[6,7] Either would have protected the brand while doing little about the actual conditions, and some would have exacerbated the situation, cutting off family incomes and displacing the very children in question. Instead, IKEA studied the context and found it was more nuanced than it first appeared: some children were trapped in bonded labour to pay off family debts, but others were learning a craft alongside their


None of this asks leaders
to abandon forecasting.
It asks them to stop mistaking
forecasts for certainty.

parents, work the local law itself protected, and many were on shop floors likely because there was no childcare.[8] So rather than cut ties, IKEA addressed the cause instead of the symptom by funding schooling and childcare near its suppliers. The result was not just continued sourcing—the narrow, robust win—but greater trust and materially better lives for those children. That is compatibility: not the solution that looks most decisive, but the one that actually fits the context it is in.

The same logic is visible in the built environment. Glass-and-concrete towers signal progress, but they were designed for cooler climates. In India's tropical heat, they trap warmth and create urban heat islands. This drives up air-conditioning use, which pushes yet more heat outdoors, creating an ever-tightening loop. From a distance the skyline looks world-class. But it is fragile underneath, dependent on cheap energy to stay habitable and exposed to every heatwave and power cut. Traditional climate-responsive features such as courtyards, shading and ventilation were generations-old, locally compatible answers to the same heat. We did not just import buildings; we imported fragility mistaken for sophistication.[9]

HEDGING AGAINST THE UNKNOWN

The human body contains two kidneys, even though it can survive with one. As Taleb puts it, if an economist designed human bodies, perhaps five people would share a kidney. But the second kidney is not evidence of inefficiency; it is protection against disease or accident. Nature carries redundancy because preparing to survive beats assuming the worst will never happen. In a world you cannot forecast, the rational move is not to commit everything to a single path, but rather to keep a portfolio of options.

At the individual level, it means letting nothing in your life carry all the weight. We know this well from finance: not putting all your savings into a single stock but diversifying your investments. The same logic applies to career, skills and identity. If your sense of self runs entirely through a single role, losing that role takes you with it. The person who is also a parent, a friend, a runner, and a community member has their identity stored in different places. None is sufficient on its own. Together, the collective identity is resilient to being destroyed by any single loss.

At the team level, this same principle separates a plan from a gamble. A hospital with several surgeons trained on a critical procedure has options when one is unavailable; a hospital relying on one surgeon has none. A team run permanently at full capacity has quietly refused all optionality; every hour is already spoken for, so every surprise becomes a crisis. Buffers in project timelines work for the same reason: they create room to absorb surprises and, when the surprise does not come, room to improve the work or gather new information.[10]

At the organisational level, just-in-time inventory was the efficiency triumph of its time, with its minimal stock and minimal waste. It worked beautifully until the first serious shock in 2020, when firms with no buffer discovered just how exposed they were. "Just-in-case" re-entered the vocabulary as the correction: some stock has to sit on a shelf doing seemingly nothing, against the day it becomes the only thing that matters. The opposite of hedging, at every level, is commitment with no way back. Every choice can be put to one test: does it keep options open, or narrow them? The second kidney looks wasteful only until the day you need it.

THE RESILIENCE WE DESIRE

None of this asks leaders to abandon forecasting. It asks them to stop mistaking forecasts for certainty. Survival Intelligence is what remains once that illusion goes: the capacity to learn and unlearn as the ground shifts, to build what fits the context in front of you and to keep enough options open to change course when your assumptions fail.

The questions that follow are practical ones. What signals are we not yet hearing, and how fast can we revise our assumptions when we do? Which practices have we imported wholesale because they worked elsewhere, without checking whether they fit here? Where have efficiency and full commitment quietly stripped out every margin we would need to absorb a shock? None of these questions abolish uncertainty. They simply stop an organisation from pretending it can.

Not knowing the future is not the worst thing. The worst thing is insisting that we can know and control it. What we need is a calibrated acceptance of not knowing, and the discipline to stay with that discomfort long enough to learn from it, design for compatibility and keep some options open. Survival Intelligence sounds unsexy; it does not make for a good motivational poster. It is, however, what we have been craving all along under the wrong name.

We asked for the shortest route and got exactly that. If we wanted the fastest, we had to say so. And if what we want is resilience, not robustness dressed up in its name, we have to learn to ask for what we actually mean.

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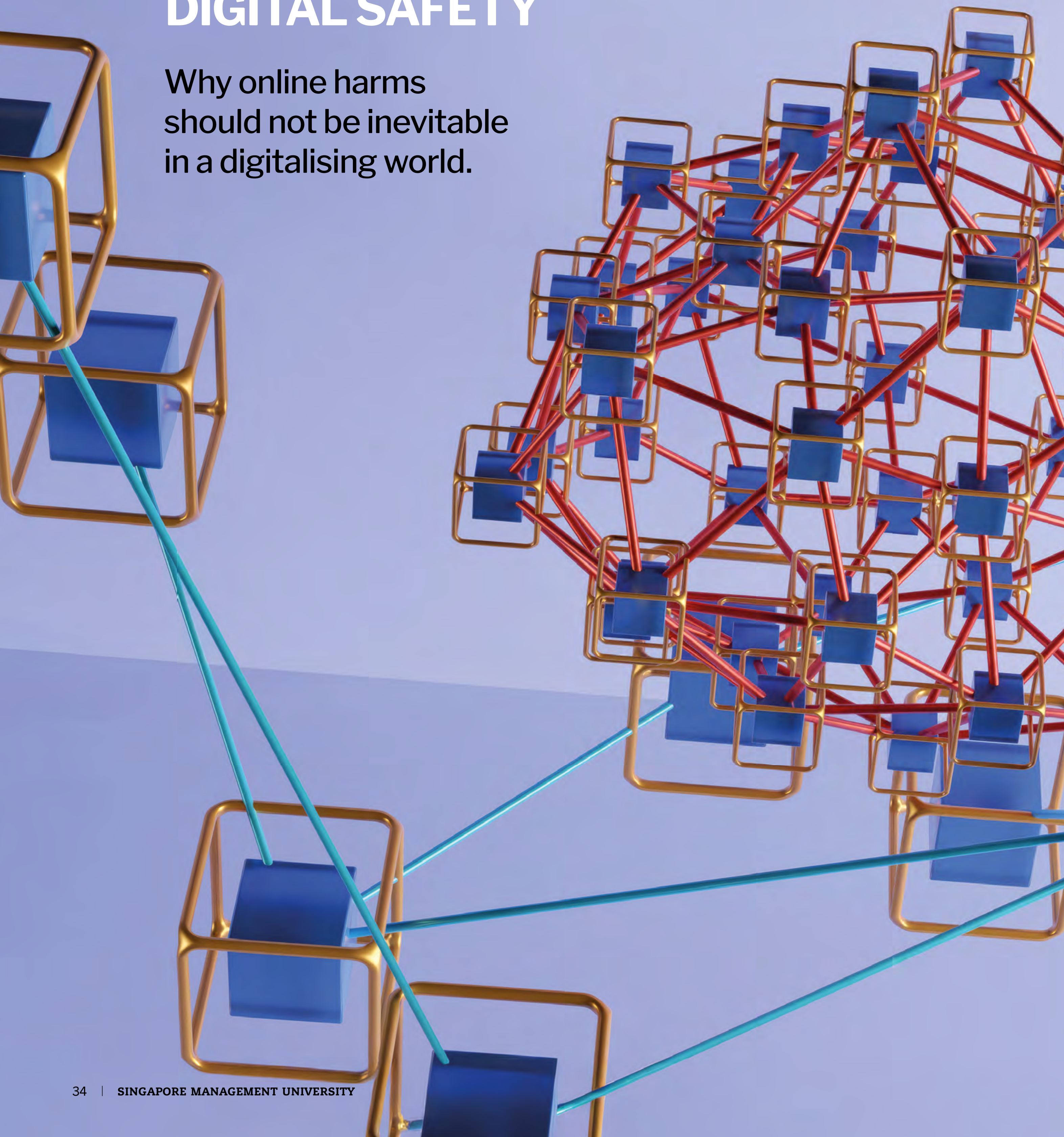
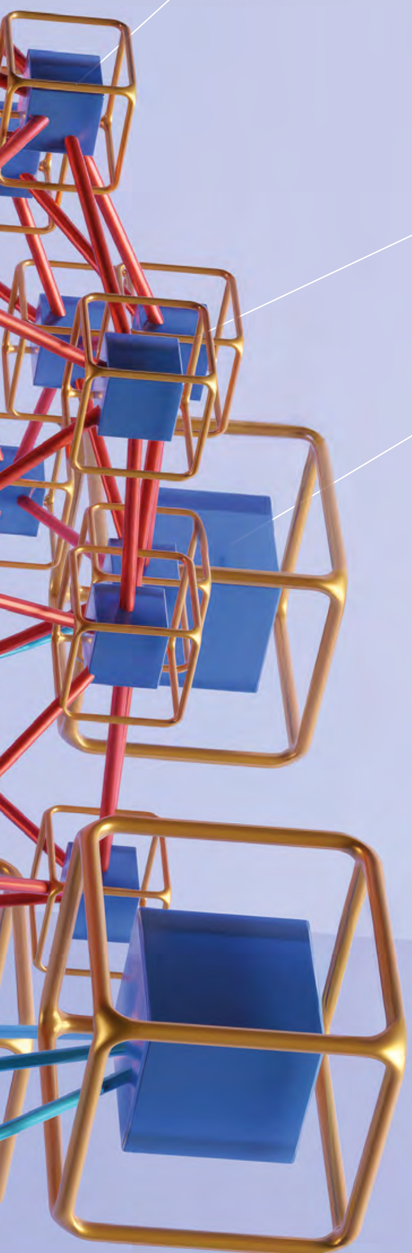
by
Lim Sun Sun

RETHINKING DIGITAL SAFETY

Why online harms should not be inevitable in a digitalising world.





Once thought to be individual responsibility, online harms have been reframed to be a product of how platforms are designed, governed and socially sustained.

The speed of response to online harms is critical; the value of relief diminishes if harms continue to circulate while victims seek redress.

Research plays a key role in enabling policy response to adapt to new forms of harm as technology evolves.

As societies worldwide digitalise, it is almost commonplace for online harms to be treated as the equivalent of background noise—unpleasant, sometimes distressing, but ultimately part and parcel of the digital realm. Trolls emerge, harassment occurs and platforms moderate, though with minimal effort.

Emboldened by anonymity and enabled by sharing platforms, trolls—users who deliberately antagonise others on the Internet—can engineer abuse at scale. Women have been especially vulnerable, with substantial exposure to grossly sexist and misogynistic content online. Social media platforms like Facebook or Telegram, or discussion forums such as Quora or Reddit, or video sharing apps including YouTube or TikTok host ‘lawful but awful’ content that demean and objectify women through the vicious tropes of toxic masculinity.

Other vulnerable groups such as ethnic and religious minorities, LGBTQ+ individuals, migrants and persons with disabilities often face disproportionate levels of online harm. These include hate speech, coordinated harassment, doxxing, which involves publishing personal information to inflict harm, misinformation and algorithmic discrimination, all of which can exacerbate marginalisation offline.

Although the Internet has undoubtedly democratised online participation, it nevertheless reproduces and even amplifies socio-economic inequalities around class, gender and ethnicity. For too long therefore, the prevailing assumption, implicit if not explicit, has been that individuals should just grit their teeth when facing online annoyances, or simply log off.

That assumption no longer holds in Singapore.

In this highly connected city-state, as in a growing swathe of digitally advanced societies, online harms have undergone a notable and decisive reframing. They are no longer regarded as episodic incidents, but as unwelcome byproducts of the online environment that undermine trust, impede participation and reverse inclusion. This shift in understanding has driven an equally significant evolution in policy, moving from reactive, case-by-case interventions to a more systemic and anticipatory approach.

Far from a niche regulatory issue, online harms and their prevalence reflect how well digital ecosystems function, who feels empowered within them and, ultimately, whether trust is both intuited and experienced.

THE TURN TO COLLECTIVE RESPONSIBILITY

A defining feature of Singapore's approach has been its refusal to treat online harms as solely a legal problem. The formation of the Sunlight Alliance for Action (AfA) marked an early recognition that the issue is fundamentally social before it is regulatory.

Launched by the Ministry of Communications and Information (precursor to the Ministry of Digital Development and Information) in July 2021, the AfA sought to address gaps in digital safety and strengthen support systems for victims of online harms. Co-chaired by then Senior Minister of State Ms Sim Ann and Senior Parliamentary Secretary Ms Rahayu Mahzam, the AfA brought together 48 representatives from the people, public and private sectors. As a whole-of-society initiative, it also contributed to the broader national Digital for Life movement that promotes digital inclusion.

With this diversity of representation, the AfA and its string of outreach efforts helped surface the "hidden majority" of experiences that rarely make it into formal complaints or legal cases. It made visible what had previously been normalised or dismissed and, just as importantly, redistributed responsibility. Online harms were no longer framed as a failure of individual resilience, but as the outcome of system design, platform governance and social norms.

With this critical reframing, the locus of intervention shifts. It is no longer sufficient to punish bad actors after the fact. The question becomes: how can digital environments be redesigned such that harm is less likely to occur, less likely to spread and easier to address when it does? The objective is not merely to respond to incidents, but to reduce systemic vulnerability.

WHEN HARM BECOMES AMBIENT

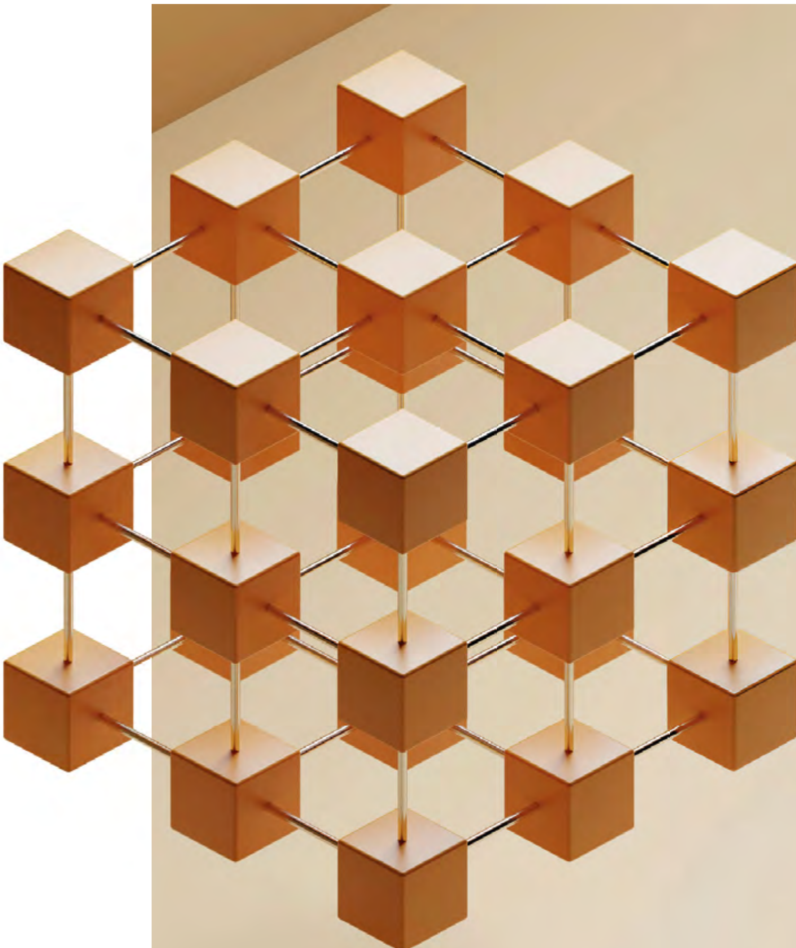
Indeed, one of the more insidious aspects of online harm is not how extreme it is, but rather its pedestrian nature. Much of it does not rise to the level of criminality, instead residing in a grey zone of persistent harassment, non-consensual sharing and coordinated pile-ons that cumulatively erodes a person's sense of safety.

In Singapore, this has become increasingly visible in both research and lived experience. Victims do not necessarily seek punishment; they seek cessation. They want the content taken down, the abuse to stop and the ability to reclaim their digital presence. Yet for many, the pathways to redress have historically been difficult to navigate. As policymakers themselves have acknowledged, victims are often deterred by existing processes and struggle to identify perpetrators or secure timely relief.

Clearly, harm resides not only in the content, but in the system's inability to respond at the speed and scale at which harm propagates. Singapore's policy evolution thus reflects adaptation to this sobering reality.

KEY LEGISLATIVE SHIFTS PERTAINING TO ONLINE HARMS

Singapore's legislative trajectory reflects this shift from episodic enforcement to systemic design. The Protection from Harassment Act (POHA) that was passed in 2014 was an important starting point. It established that harms such as harassment, stalking and doxxing are not trivial but actionable. Yet it was, in many ways, a product of an earlier Internet where harms were more discrete and perpetrators more identifiable.



Online harms are no longer framed as a failure of individual resilience, but as the outcome of system design, platform governance and social norms.

As digital environments became richer and more complex, the limitations of this approach became clearer: harm could spread faster than legal processes could contain it; perpetrators could remain anonymous or operate across jurisdictions; and platforms, which mediated much of this activity, sat somewhat ambiguously between facilitator and gatekeeper.

The Online Criminal Harms Act (OCHA) passed in 2023 then marked a decisive departure from this earlier model. It introduced the ability for authorities to intervene upstream, issuing directions to platforms and other entities to disrupt harmful activity before it fully materialises. With this conceptual shift, the law does not merely adjudicate wrongdoing after it occurs but rather seeks to influence conditions under which wrongdoing can occur at all.

This logic is extended further in subsequent developments. On 18 July 2023, the Infocomm and Media Development Authority introduced the Code of Practice for Online Safety, requiring platforms to establish systems and processes to mitigate harm, inscribing accountability into the architecture of digital services. The emphasis is increasingly on outcomes rather than prescriptions, allowing for flexibility while maintaining clear expectations.

RECENTRING THE VICTIM

If those preceding legislations reflected a move toward systemic intervention, the Online Safety (Relief and Accountability) Act (OSRA) passed in November 2025 represents a shift toward the lived experiences of victims.

One of the most persistent critiques of earlier frameworks was that they were, in practice, inaccessible. Although legal remedies existed, they were often too slow, too complex or too costly for those affected. OSRA addresses this gap directly by reorienting the system around the needs of victims. Importantly, it recognises a simple but powerful reality: in the context of online harm, speed is justice. The value of a remedy diminishes rapidly if harm continues to circulate unchecked.

The Act therefore introduces mechanisms designed to deliver timely and practical relief. It establishes statutory torts that clarify responsibilities across users, administrators and platforms, and enables victims to seek redress more directly. It also addresses the problem of anonymity by allowing for the identification of perpetrators under appropriate safeguards.

Perhaps most significantly, OSRA creates the institutional foundation for a new mode of governance through the Online Safety Commission.

ESTABLISHMENT OF THE ONLINE SAFETY COMMISSION

The establishment of the Online Safety Commission (OSC) in June 2026 signals a maturation of Singapore's legislative approach. Rather than relying solely on courts or dispersed regulatory powers, the Commission was conceived as a dedicated node within the governance architecture. Taking learnings from Australia's eSafety Commissioner, the OSC is intended to operate as a first point of recourse, capable of acting quickly and proportionately. It can issue directions to remove content, restrict accounts or require other remedial actions, targeting not only perpetrators but also platforms and administrators.

In doing so, it addresses a fundamental mismatch that has long characterised online harm: the speed of harm versus the speed of response. Traditional legal systems are not designed for real-time intervention, but a specialised body such as the OSC is. This is consistent with broader global trends, where jurisdictions are experimenting with dedicated regulators for digital harms, but Singapore's approach is notable for the degree to which it integrates this institution within a broader ecosystem of laws, codes and partnerships.

This has tangible business consequences as online harms go directly to the question of trust. Digital platforms, marketplaces and communities depend on users' willingness to participate, share and transact. When environments are perceived as unsafe, participation becomes selective, guarded or withdrawn altogether.

It affects user growth, engagement quality, brand reputation and, ultimately, revenue. More subtly, it shapes who participates: if certain groups—women, minorities or younger users—are disproportionately affected by harm, their absence or silence distorts the very markets and communities that businesses seek to serve.

With online harms regulation, businesses are impelled to invest in governance capabilities, from content moderation systems to internal escalation processes, and engage more continuously with regulators. Ultimately, a healthier information landscape will be win-win for consumers and businesses alike.

SETTING THE RESEARCH AGENDA

Undergirding Singapore's approach is a less visible but equally important thread: academic research.

Policy in this domain cannot rely on intuition or online virality alone. Online harms are dynamic, context-dependent and often difficult to measure. Research provides the empirical grounding needed to understand not just the prevalence of harm, but its forms, trajectories and impacts.

In the case of OSRA, for instance, the emphasis on victim-centric remedies reflects extensive consultation and evidence-gathering. Policymakers did not simply assume what victims needed but engaged the ground through expert and public engagement dialogues.

Research also plays a critical role in anticipating what comes next. The rise of generative AI, for example, is already reshaping the landscape of online harm, enabling more sophisticated forms of impersonation, manipulation and synthetic content. Without sustained research, policy risks always being one step behind. To this end, the Research Workstream of the Sunlight AfA, which I had the honour of leading, mapped out a research agenda that guides future work on this fast-evolving area, identifying key issues and actors, impact assessment approaches as well as appropriate research methods.

Issues

Conceptual

- Definitions of harm and severity of harms: provide clarity and impact on reporting and responses by companies, criminal liability, reporting and enforcement, proportionality of response
- Nomenclature: naming different kinds of online harms in more value-neutral and accurate manner e.g. alternatives to 'revenge porn'

Individual

- Victims: experiences, support needed, wellbeing (physical and mental)
- Bystanders: diffusion of responsibility, bystander intervention
- Accomplices who aid and abet online harms through gatekeeping role(s)
- Resilience of individuals in face of online harms
- At-risk individuals less inhibited about perpetrating online harms and interventions required
- Family structures and dynamics' impact on individual resilience, combined with issues of class, household composition etc.

Group/Community

- Group norms in different online platforms, e.g. Singaporeans more reticent about calling out bad behaviour?
- Social resilience as manifested in support from social groups and networks for victims in terms of direct assistance or other resources; issues of resource capacity and nature and scope of support
- Religious/cultural groups: social stigma, community and religious leadership, religious discourse promoting or preventing online harms (comparative research across religions). Cultural groups could encompass ethnic, youth, pop cultures etc.
- Family support or lack thereof has implications for community response
- Groups of interest: *domestic workers* (vulnerable), *families* (need guidance on parental mediation), *young males* (exposure to porn, normalisation of attitudes towards sexual relationships)

Industry (technology, media)

- Best practices: industry engagement for greater knowledge sharing and industry self-regulation including industry codes of practice
- Safety features introduced and their efficacy (media and tech platforms)
- Reporting systems of different tech platforms and their efficacy (comparative analysis)
- CSR initiatives and their value
- Guidelines on privacy protection/codes of professional practice in reporting sexual incidents
- App design and metrics that promote hostile online environments e.g. dehumanisation, monetisation, use of avatars

Policy/Advocacy

- Codes of practice for online safety: comparative analysis of diverse global approaches
- Dedicated enforcement agency for online harms: feasibility analysis
- Evidence-based research to drive recommendations
- Mainstream education components to raise students' understanding of online harms and their responsibility and agency (up to and including tertiary education)

Impact Assessment

- Periodic assessments of the effectiveness of public education, legislation, technology company responses
- Perceptions of different respondent profiles and trends over time
- Longitudinal analysis of impact of policies

Approaches

Qualitative, ethnographic research

- Interviews, focus groups, discourse and conversational analysis, case-based research, online ethnography (rich contextualised findings on victim trauma, bystander attitudes and interventions etc.)

Quantitative, computational research

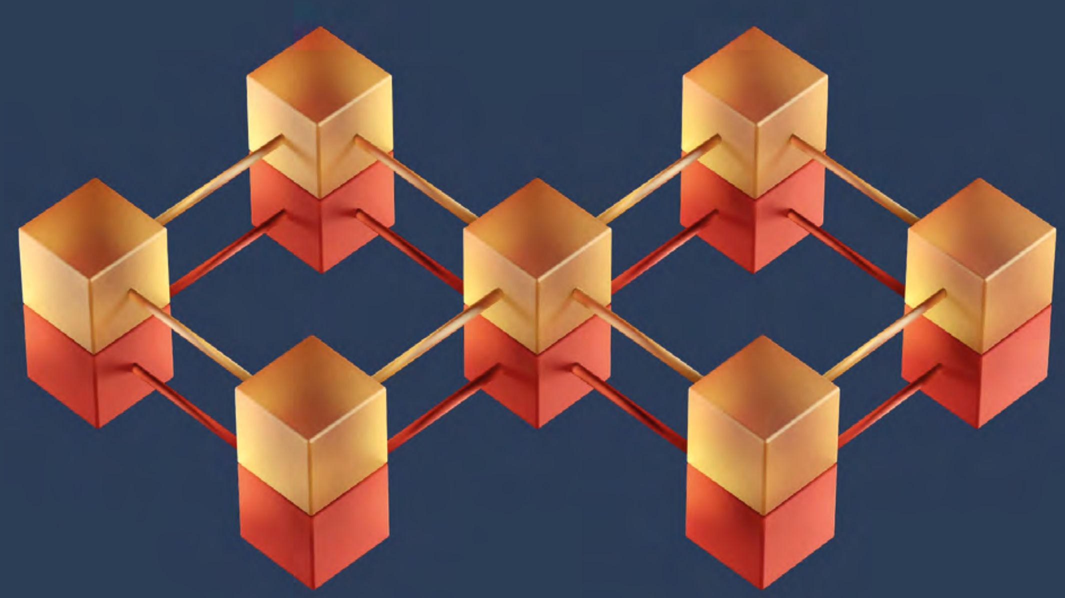
- Panel study to follow a pool of participants for assessing longitudinal effects
- Developing accurate survey measures for sensitive questions relating to online harms (tracking non-response rate to particular questions, by different respondent profiles etc.)
- Machine learning supported content analysis of videos and discussion forum threads with harmful content (trends in engagement with misogynistic content, common tropes etc.)

Technological tool development

- Tools to help detect misinformation, collect evidence in claim verification process, analysing social media content to see if images have been repurposed and taken out of context, tools to construct profiles of people to help verify identity of persons to potentially befriend, tools to guide prosocial behaviour

Summary of key issues and actors, impact assessment and approaches to research developed by the Research Workstream of the Sunlight Alliance for Action (AfA).

Resilience at the level of a system is not a problem to be solved once and for all, but a condition to be constantly managed.



Equally important is the role of research in translation. Academic insights must be made legible to business, policymakers and the public. It is not merely a communication challenge but a governance imperative: a society that better understands online harms is better equipped to respond to them. In this regard, Singapore Management University's Yong Pung How School of Law and its Centre for Digital Law drove a landmark event that demonstrated the importance of tackling online harms. Organised with Ministry of Law Singapore, the Online Harms Symposium: Exploring New Solutions and Legal Remedies for a Safer Online World ran from 25-27 September 2023.

The symposium convened leading local and international experts on online safety, including legal professionals, academics, community organisations and technology companies, to discuss emerging challenges and explore effective and accessible solutions to online harms. Attracting over 160 participants each day, the event fostered lively and substantive discussions among stakeholders from the public, private, and people sectors, including major technology firms such as Amazon, Apple, ByteDance, Google, LinkedIn, Meta and X. Its accompanying report serves as a pithy guide to the critical issues pertaining to online harms.

GOVERNING A MOVING TARGET

If there is a single lesson from Singapore's experience, it is that online harms cannot be addressed through static solutions. They evolve alongside technology, often in counterintuitive ways.

The policy response too, therefore, must be adaptive. It must combine legal frameworks with institutional capacity, technological tools with human judgement and regulation with education. It must also remain attentive to trade-offs, particularly the balance between safety and freedom of expression.

What has changed in Singapore is not simply the set of laws, but the underlying mindset. In the case of online harms, they must be understood as systemic risks that require coordinated, sustained and evidence-based response involving a broad range of stakeholders. Universities are poised to play a vital role in engaging and even convening these stakeholders, while undertaking nuanced research that can shape policy making and public outreach.

This, ultimately, is what resilience looks like at the level of a system: not a problem to be solved once and for all, but a condition to be constantly managed. AMI

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by Susan Chong
and Tan Hwee Hoon

PURPOSEFUL ENGAGEMENT: HOW SUPERVISOR SUPPORT DRIVES SUSTAINABILITY OUTCOMES

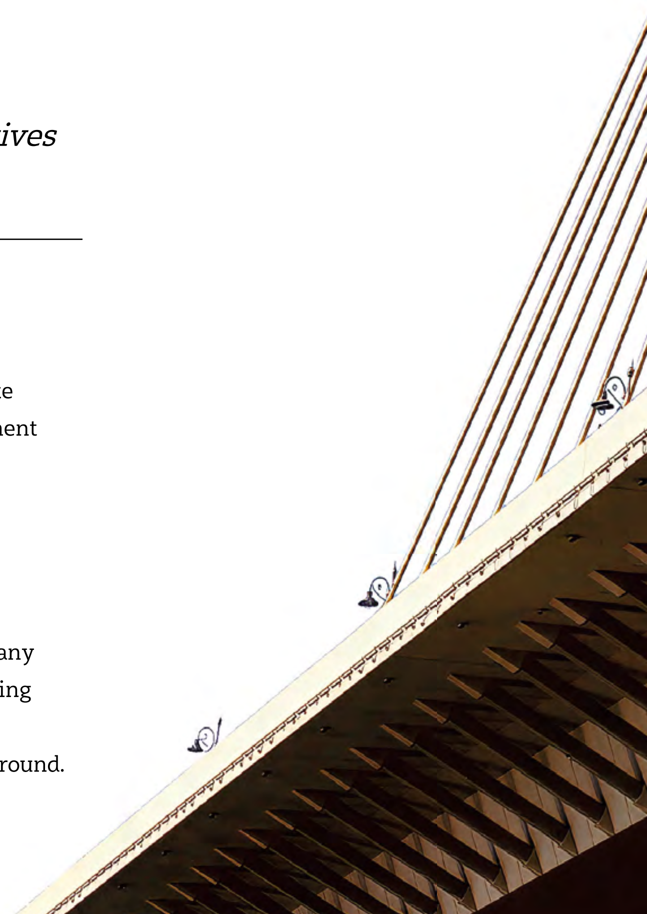
NUHS and Alexandra Hospital demonstrate how employee engagement translates into measurable results, resourcing and recognition.

I. *Employees are more likely to engage with environmental sustainability when it feels meaningful, supported and feasible.*

II. *The supervisory layer is critical to continuing staff-led initiatives, legitimising employee efforts and enabling participation.*

III. *Practical support of employees from supervisors and senior management can turn voluntary initiatives into formal, organisation-wide sustained action.*

Sustainability has risen sharply on the corporate agenda as climate risks intensify amid growing expectations from society, government and investors.[1] In 2024, global temperatures reached the warmest levels recorded since 1880,[2] and the World Meteorological organisation[3] reported that warming trends continued into 2025. The latest assessment by the Intergovernmental Panel on Climate Change (IPPC) also notes widespread climate-driven changes affecting weather and climate extremes in every region, with mounting adverse impacts on both nature and people.[4] Yet many organisational sustainability strategies still concentrate on policies, reporting and senior leadership commitments. What often gets less attention is how sustainability ambitions are translated into day-to-day behaviour on the ground.



BACKGROUND OF THE STUDY

One underused lever of sustainability is employee engagement, particularly the kind that prompts staff to take initiative beyond formal job scopes. Social sustainability—the ‘S’ in ESG (environmental, social and governance)—is frequently discussed at the level of workforce wellbeing and culture, but less often translated into actionable mechanisms that drive environmental outcomes. Notably, employee engagement at work has been low worldwide, hovering around 20% since 2018,[5] and with job descriptions rarely able to anticipate every relevant environmental task, many meaningful environmental improvements are dependent on voluntary, employee-led action. With the growing need for increased employee engagement, coupled with rising climate challenges, I conducted a study on how employees in Singapore could become more personally engaged and have a greater sense of belonging at work, leading to greater voluntary identification with and initiation of environmental initiatives at the workplace. Under the guidance of my dissertation committee chair, Associate Professor Tan Hwee Hoon of the Lee Kong Chian School of Business (LKCSB), Singapore Management University (SMU), my study drew on Kahn (1990)’s[6] psychological conditions for engagement: meaningfulness, safety and availability of resources. It also considered the impact of biospheric values of the employee on this engagement. Data were gathered from a survey of 496 participants in Singapore across 19 industries. The study assessed personal engagement through employees’ perceived psychological meaningfulness, safety and availability of resources for environmental initiatives. It then examined whether these conditions were associated with employees voluntarily identifying and taking on environmental initiatives, often described as organisational citizenship behaviour towards the environment (OCBE).

The findings of the research study were instructive for organisations looking to drive impact through behavioural change. We found that:

- Perceived supervisor support was significantly associated with employees’ perceived meaningfulness and availability of resources for environmental initiatives.
- Employees’ perceived meaningfulness and availability of resources were, in turn, significantly associated with OCBE.
- The psychological condition of safety did not emerge as necessary for OCBE in this context, likely because supervisor support already provided a sense of permission and protection for employees to act.

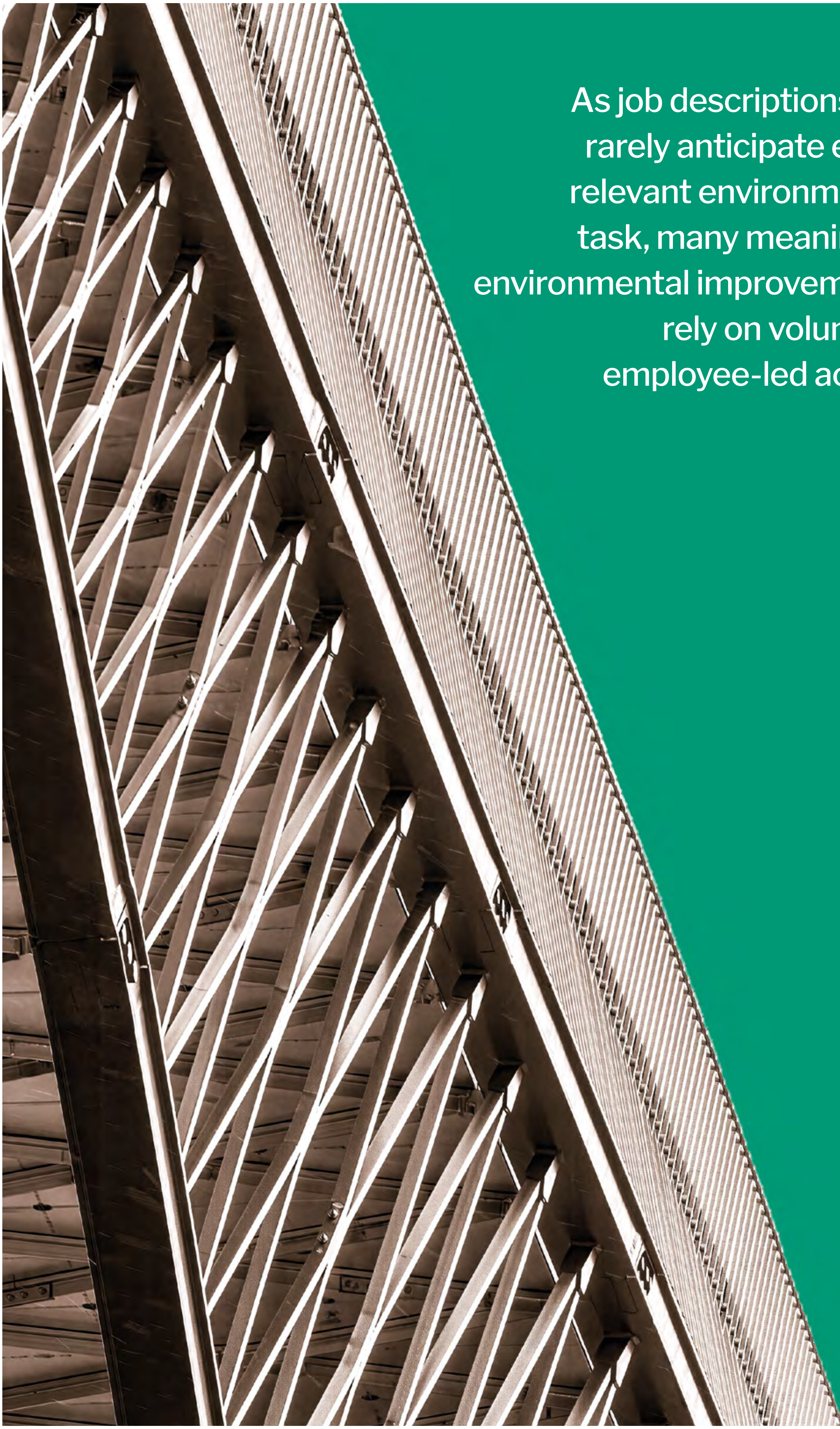
The findings of the study suggest that, for voluntary environmental sustainability initiatives, the supervisory layer is pivotal. It shapes whether employees perceive environmental sustainability work as meaningful, supported and feasible, thus encouraging them to undertake this work on a voluntary basis.

ALEXANDRA HOSPITAL: SUPERVISOR SUPPORT IN ACTION

The findings of the study resonated with Jeffrey Chun, Chief Operating Officer (COO) of Alexandra Hospital (AH) and Group Chief Operating Officer of the National University Health System (NUHS). At AH, employee engagement played a visible role in the organisation’s sustainability journey through a Special Interest Group. The Group began when a nurse approached the hospital CEO, who was known to support environmental sustainability. She was then linked to Mr Chun, and the group was formed after a few interested staff members came together.

Importantly, the Group operated with minimal formal infrastructure in the beginning. Staff met during lunch breaks and identified initiatives that did not disrupt clinical duties. Supervisors supported participation, and the group did not require a dedicated budget to begin making improvements. Examples include adjusting air-conditioning temperatures, introducing reusable crockery in wards and digitising information brochures. Though there were no formal incentives for their efforts, the group was dedicated to these environmental initiatives, and the support from supervisors was vital in encouraging their continuation.

Over time, the voluntary efforts became institutionalised. The success of the Special Interest Group led to the allocation of a dedicated full-time equivalent role and a budget for sustainability initiatives at AH. In 2024, KPIs included reducing the energy utility index and paper use; the hospital achieved a 10% reduction relative to the 2020 baseline.



As job descriptions can rarely anticipate every relevant environmental task, many meaningful environmental improvements rely on voluntary, employee-led action.

In 2025, Alexandra Hospital also received two international sustainability awards: Silver Winner, Geneva Sustainability Centre Excellence Award for Hospital Sustainability Acceleration; and Honourable Mention, Ashikaga-Nikken Excellence Award for Low-Carbon Health Care (International Hospital Federation), for the Go-Green programme. These outcomes reflect a progression that many organisations work toward but struggle to deliver: from voluntary initiatives to operational results, and from formal resourcing to external validation.

SCALING IMPACT WITH EMPLOYEE ENGAGEMENT

Mr Chun also chairs a NUHS sub-taskforce on waste and recycling under the NUHS Green Plan Steering Committee. Rather than tying outcomes to punitive KPIs or individual bonuses, the sub-taskforce used stretch targets with recognition for achievements. Targets included a 60% reduction in waste and a 60% recycling rate by 2030, benchmarked against 2019 norms, with intermediate targets set annually. The targets were framed as best-efforts, without affecting bonuses.

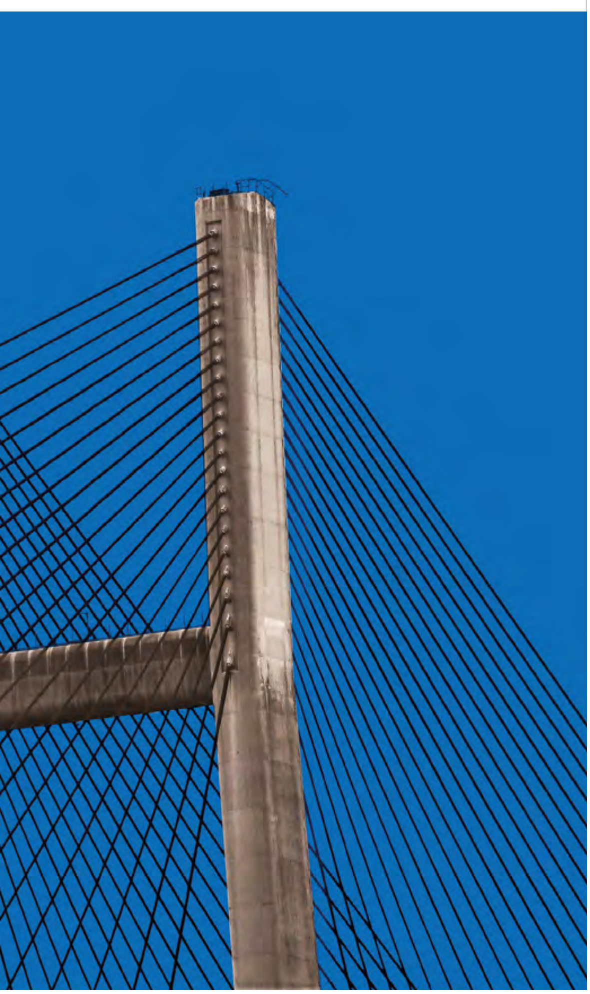
The sub-taskforce emphasised involvement across levels of staff and encouraged idea generation. Approximately 80% of ideas were bottom-up. While top-down initiatives tended to have larger budgets and group-wide systems, the impact of bottom-up and top-down initiatives was reportedly broadly comparable—suggesting that staff-led initiatives can deliver tangible gains when supervisors legitimise and enable participation. Within two years, NUHS achieved 15% reduction in waste tonnage; waste generated was 13% lower than 2019 levels, despite increasing workload; 31% reduction in paper usage and recycling (based on trash) increased to 11%, up from 4% in 2019.

Although top-down initiatives tended to have larger budgets and group-wide systems, their impact matched that of staff-led initiatives, indicating what tangible benefits can be possible with supervisor support.

THE BOTTOM LINE

Despite the absence of punitive KPIs, the sub-taskforce delivered stronger-than-expected results within a few years of launching its efforts in 2022. This suggests that members were not simply complying with targets; they were acting because the work felt meaningful, and because they had sufficient support and resources to contribute. In other words, practical enablement and encouragement from supervisors and senior management helped translate voluntary participation into sustained action.

The research outcomes also point to an important consideration in Singapore's organisational context: where group ties are strong, employee engagement is more likely to spread when it is reinforced at the team level. The NUHS experience reflects this dynamic. Stretch targets were voluntary and achievements were recognised, yet broad participation—supported by supervisors and reinforced by senior management—helped mobilise bottom-up ideas and deliver measurable improvements in waste reduction and recycling outcomes.



In recognising the study's impact, Mr Chun commented: "the findings emphasised the importance of supervisor support in environment management, which has been crucial in enhancing the meaningfulness and personal engagement of our employees in voluntary environmental initiatives." The research outcomes have also "validated and reinforced the environmental initiatives at NUHS and AH, providing a strong foundation for our future efforts with the support of senior management and supervisors."

Taken together, the NUHS and AH examples show how supervisor support for environmental management can activate employee engagement and translate discretionary effort into sustainability outcomes for an organisation. Above all, sustainability impact is not only driven by strategy and governance at the top. It is also shaped by whether supervisors played a role in legitimising, enabling and recognising voluntary environmental sustainability contributions on the ground—generating benefits for both organisational performance and employees. AMI

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by
Yasmin Ortiga

BEYOND HUMAN CAPITAL

Skills are not just individual capabilities. They are shaped by how societies and organisations recognise, develop and reward the work they depend on.

Recognition, not just competence, determines whose skills count. In licensed professions, it can determine whether someone can practise at all.

How skills are perceived can have far-reaching consequences, especially in industries where their core functions are not formally recognised as skilled work.

Building capabilities for resilience involves approaching skills not as a resource to accumulate, but as capacities to recognise, develop and reward fairly.

Anxieties about the future often spark efforts to equip workers with new skills in the name of resilience. But what kind of skills? There have been many different answers through the years: ‘in-demand’, ‘flexible’, ‘competitive’ or ‘critical’. Yet, when faced with uncertainty of the future, institutions often pull from the same playbook: produce, attract or retain people with the right kind of skills.

However, the story of skill is far from simple. As a social scientist, I study how governments, employers and workers define the nature and value of skills. What I have found is that skill is not simply the capacity to perform a task. It also shapes how work is organised, whose labour is recognised and which forms of work are rewarded as valuable.

One way to understand this complexity is to begin with a seemingly simple question: Who gets to practise medicine and treat patients? It would seem reasonable to assume that anyone who studied medicine should be qualified to do so. However, a recent controversy surrounding treatment of foot conditions serves as an example of how the answer is not so straightforward. In countries such as the UK, podiatrists who treat foot and ankle ailments can perform surgery on their patients. In South Korea, however, many of the same procedures can only be carried out by orthopaedic surgeons. Both groups may have the technical skill to operate on feet, but each country draws different boundaries in deciding who is authorised to do so. This process often involves fraught negotiations over who should perform these surgeries and subsequently, who could charge for their services.[1] Such issues go beyond simply evaluating whether one is capable of executing a certain task. If professional boundaries show how societies authorise skill, moments of crisis show how urgently they must decide which skills matter.

As increasingly varied and frequent crises make the future of work more uncertain, determining the skills we need becomes even more difficult. In an analysis of government speeches during the COVID-19 pandemic, researchers found that state officials fell back on a strategy of "stockpiling" and "forecasting" skills.[2] The former is the familiar practice of recruiting workers with essential, immediately deployable capabilities. At that time, small nation-states such as Singapore and Sweden prioritised skills in healthcare and biotechnology. In contrast, the task of forecasting skills is far more ambiguous and relies mainly on attempts to predict the capacities that *might* be required in the distant future.

In other words, people are increasingly expected to train for jobs that they are yet to have, and, in some cases, for roles that do not yet exist. While there is value in investing in skills, making education decisions on the basis of forecasted skills puts the risk onto workers themselves, who invest their time and money to enhance their own "human capital".

FAILURES TO RECOGNISE SKILL

Yet resilience is not only about anticipating the skills the future may require. It also depends on recognising the capabilities that already sustain essential work today. Work that is labelled as "unskilled" is more likely to be underpaid, undervalued and regarded as undesirable. In many Asian countries, the line between skilled and unskilled is often based on academic credentials and education, immediately putting blue-collar workers at a disadvantage. Being a migrant in a foreign country makes this misrecognition even worse. In her study of migrant construction workers in Qatar, Natasha Iskander found that categories of skill informed state controls over migrants' bodies. Migrants deemed as "unskilled" faced multiple constraints on where they lived and the areas they were allowed to enter in the capital city. They were also made to work in more perilous conditions, exposing them to work accidents, dehydration and heat stress.[3]

There are also types of work where no form of education or training can remove the "unskilled" label, which I have observed in my research on care workers in Singapore.[4] Singapore relies heavily on migrant domestic workers to care for elderly relatives at home. However, many of them are not prepared for the responsibilities involved, such as managing medication and changing adult diapers. While state agencies provide subsidised training programmes on elderly care, filling the capabilities gap to fulfil caretaking needs, certified skills have done little to raise wages for such work. In interviews with employers, I found that many continued to evaluate caregiving ability not by formal certification or education, but through race, age and demeanour. One employer, for instance, hired a domestic worker because the applicant had smiled during the interview.

When a form of work is not recognised as a skill, there may be far-reaching consequences across society. Singapore's care industry, for example, continues to face high turnover rates. This is compounded by a rise in elder abuse, increasing stress among families and growing competition in other ageing societies such as Taiwan and Hong Kong. It is clear that the long-term sustainability of Asia's ageing societies will increasingly depend on care labour being performed well. I would argue that a first step in raising the quality of care is in learning how to manage and govern it as a skill, rather than just cheap labour imported from overseas.

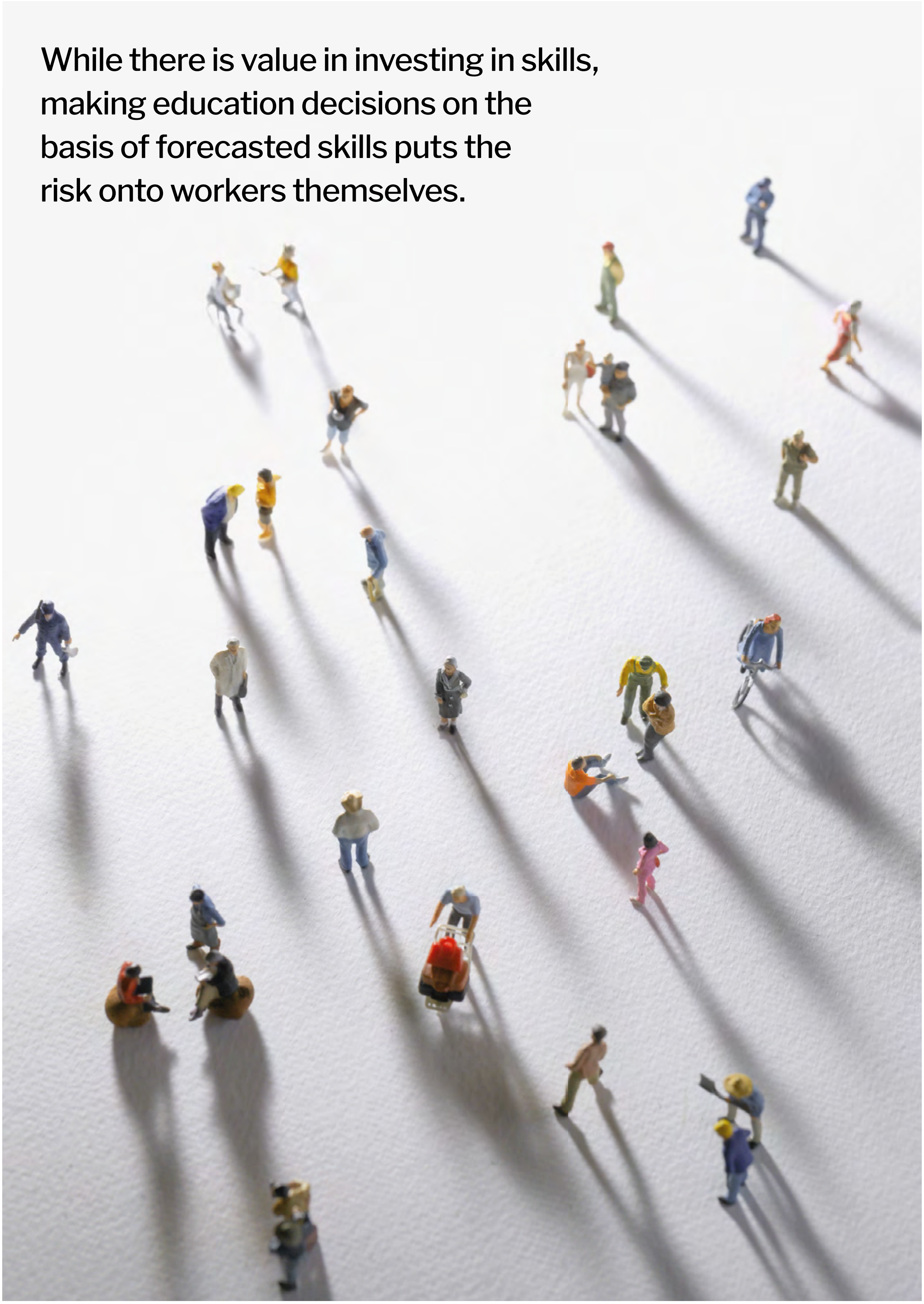
WHAT ORGANISATIONS AND POLICYMAKERS CAN DO

How, then, should managers and policymakers think about the skills needed to meet future challenges? We can start by moving beyond the idea of skill as something to be simply accumulated and stored. Instead, a better and harder goal is to develop and recognise the capacities that truly build resilience, whether in organisations or across society. The following are some initial steps towards ensuring that these skills are recognised and rewarded in practice.

Make skills visible in the workplace

Many jobs require interpersonal and thinking skills that are rarely articulated clearly, even though they are central to effective performance. While a junior executive can easily demonstrate knowledge of how to write a report or use a new software, it is much harder to prove the ability to manage conflicts or unhappy clients.

While there is value in investing in skills, making education decisions on the basis of forecasted skills puts the risk onto workers themselves.

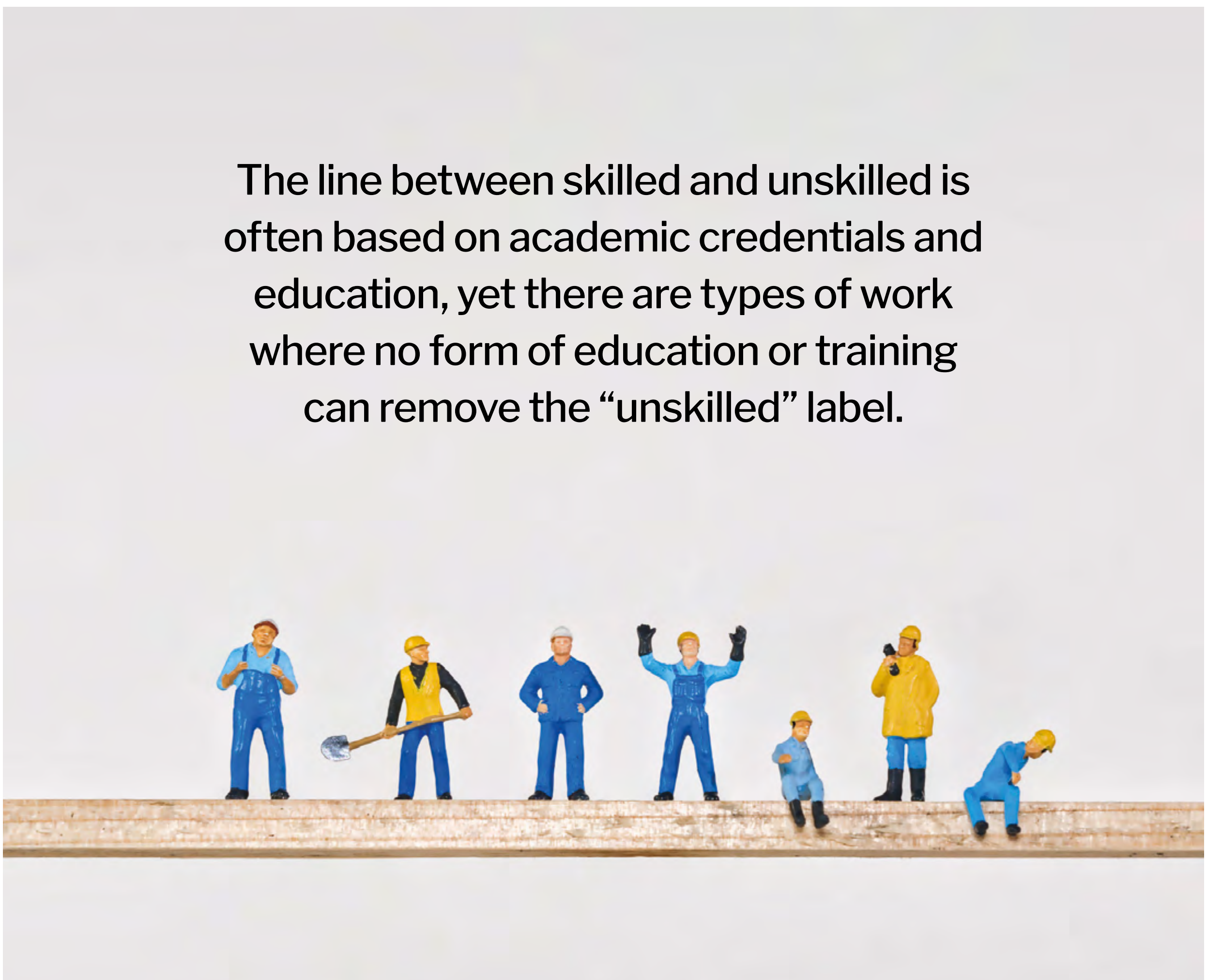


Researchers argue that some of the most invisible skills in the workplace are those associated with "women's work", such as mentoring, administrative coordination and emotional support to others. These tasks involve both emotional labour and significant social skills, yet they remain unpaid and often unrecognised. Research also shows that they are disproportionately performed by women and ethnic minority employees, regardless of occupation and position.[5]

Part of recognising skill, then, involves making such invisible skills visible in institutions. Managers can revise performance metrics to include mentoring and coordination work. Employee reviews can also create space for individuals to document their contributions beyond the outputs directly associated with their formal job descriptions. Doing so will allow workers to make these abilities visible and enable employers to reward them appropriately.

Develop the skills that matter

If certain capacities are important for building resilience, institutions must also create opportunities for people to develop them. In discussions of skill, there is often a tendency to prioritise formal credentials and certificates. But these qualifications take time to obtain, and schools may struggle to keep pace with changes in the economy. One need not look too far for examples: at the start of my academic career, the rise of data science made computer engineering one of the most popular fields of study, for both undergraduates and professionals. This trend has already begun to shift with the emergence of artificial intelligence.



Scholars have argued that one promising approach is to make learning opportunities available within the workplace, alongside a clear institutional commitment to developing missing skills. For example, research suggests that emotional intelligence can be trained, but only when organisations provide the time and space for employees to practise this skill. However, as most institutions rely on one-off workshops or training programmes to develop these so-called "soft skills", it becomes challenging to cultivate such capabilities for the long-term. This is despite evidence suggesting that more effective programmes are spaced over several months.[6]

Reward essential skills

Finally, and perhaps most importantly, we need to reward the skills that we truly value. Given the growing dominance of artificial intelligence, perhaps it is time to reconsider which capacities are truly human and unlikely to be replaced by machines. Here, the question of care is central once more.

Good care involves communication, emotional intelligence and an attunement to the needs of others. In professions such as nursing, practitioners need the tactile ability to insert a needle into a vein, alongside the interpersonal capacity to reassure anxious patients and families. However, it remains a challenge to recognise and compensate such skills. In many state programmes for attracting talent, care work is rarely framed as a form of skill that warrants strategic investment. Although the post-pandemic period has seen more efforts to recruit nurses, other care workers such as teachers, social workers and live-in caregivers are still underpaid. In many ways, governing skill for resilience is not only about identifying the skills to overcome crises, but also about recognising the biases that keep those capacities from being properly valued.

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by
Keith M. Fitzgerald

CRISIS AGILITY: RESILIENCE AS A SKILL SET

In a world of constant disruption, resilience depends on more than the ability to endure. Effective crisis response requires capabilities that can be learned and practised: recognising what is happening, responding purposefully and adapting as conditions change.

1 *As disruption becomes more frequent and complex, effective crisis management is increasingly important to organisational resilience.*

2 *Experience remains a powerful teacher, but individuals and organisations can also learn principles and practices that help them respond to crises promptly and purposefully.*

3 *Diagnosing a crisis before acting is critical to determining the right response and avoiding actions that may worsen the situation.*

Popular dictionaries regularly publish an annual "Word of the Year". 2026 will, no doubt, see many candidates for that honour, but my bet is on the word "resilience". If resilience itself is not chosen, the winning word may well describe either a component of resilience or a catalyst for it. The term is now on nearly every set of lips linked to geopolitics, international security and public policy, and one need not look far to see why.

The world is becoming increasingly disrupted—and disruptive—with multiple crises converging across many fronts: trade relationships subsumed by Great Power competition that throw supply chains off balance; an increasingly distorted information landscape that creates fertile ground for scams and security threats; new health risks emerging fresh after a global pandemic; and, in the background, the encroaching climate crisis turning up the temperature, both literally and figuratively.

There is a term, coined nearly forty years ago, that describes the world we are living in: VUCA.[1]

- **Volatility** and chaos shred our sense of safety and stability.
- **Uncertainty** force-feeds stress and anxiety.
- **Complexity** can be overwhelming, breeding a sense of helplessness.
- **Ambiguity** erodes trust in institutions and belief in the reliability of any information.

The VUCA world, which we have been warned about for decades, is no longer an abstract idea. In such conditions, how can we invest, enter contracts, create new policies or make consequential decisions without apprehension? This is where resilience matters.

UNDERSTANDING RESILIENCE

We generally understand resilience when the term is used in a particular context. But the term is being pulled in so many directions, to serve so many purposes, that it can begin to feel like a harbour in the tempest: an all-purpose refuge from disruption, or simply the will to survive. For resilience to be useful as a concept, however, we need to be clearer about what it means. One of the best explanations of resilience, and the four main concepts that define it in practice, comes from the field of reliability engineering.[2]

1. Resilience as **robustness**, or the ability to absorb shocks.
2. Resilience as the capacity to **rebound** and/or recover after a crisis or traumatic event.
3. Resilience as the capacity to **adapt** to sudden shocks, traumatic events or change.
4. Resilience as the capacity to **sustain adaptability** through time and changing conditions. The truly resilient are those who are prepared for just about anything, and who have the ability to withstand it.

Understanding the key concepts of resilience is one thing, understanding resilience *in practice* is another. The best—though often most costly—way to learn is through experience: being at the front line when a team or organisation confronts a crisis; seeing which capabilities enable it to absorb the shock, recover and adapt; learning what those qualities look like on the ground. Societies that confronted SARS and COVID-19, for example, have experience they can draw on when the next health crisis emerges. In a similar vein, when I was training and advising Siam Commercial Bank in Crisis Leadership some years ago, the team I worked with had already faced several serious floods, a Global Financial Crisis and more than one military coup. Some had also lived through the Asian Financial Crisis of 1997.

Enduring multiple crises does not, by itself, guarantee resilience. But the familiarity that comes from that experience can reduce the shock, awe and feelings of helplessness that often accompany a crisis. Experience cannot be *taught*. What can be taught are principles, practices and ways of responding that can help individuals, organisations and societies to prepare, act with greater purpose and build agility to adapt under pressure.

Enduring multiple crises alone does not guarantee resilience, but the experience gained can reduce the shock and helplessness that often accompany one.

EIGHT BEHAVIOURS THAT EXACERBATE A CRISIS

One way to understand effective crisis response is to contrast it with behaviours that commonly make difficult situations worse.

1. **Denial**: The cognitive dissonance that allows someone confronted by crisis to rationalise alternate explanations for what is happening.
2. **Delay**: The hesitation that stems from indecision and results in missed opportunities to ameliorate the consequences of a crisis.
3. **Paralysis**: The "freeze" in "fight, flight or freeze", paralysis is the prolonged inability to act when action is needed, often because fear and uncertainty have become overwhelming.
4. **Panic**: When fear hits the tipping point that overrides rational thought and decision-making.[3]
5. **Flight**: When overwhelmed by crisis, one may feel that walking—or running—away is the only option.
6. **Overconfidence**: A big ego is a blindfold in a crisis. Some use crises as a personal opportunity to shine, believing they can wrest control of a situation that, by definition, does not allow it.
7. **Wishful Thinking**: While an unwavering belief of an eventual return to normalcy can add to one's crisis endurance, unfounded optimism can lead to serious consequences. The "Stockdale Paradox"[4] captures the difficult balance between maintaining hope and confronting reality under extreme circumstances.
8. **Reacting**: Many crisis-management mistakes occur when one allows events to dictate their actions rather than responding purposefully to influence—not control—the situation and ameliorate its consequences.

SIX RESPONSES THAT CAN DEMONSTRATE AND BUILD RESILIENCE

Paired against the eight behaviours that exacerbate crises, these are six practices that can help address crises productively and build resilience over time.

1. Confront and Accept the New Reality (*Denial, Overconfidence, Wishful Thinking*)

When crisis strikes, there is almost always an initial moment of realisation where something is clearly wrong, but we have yet to grasp the consequences. When the first plane hit the World Trade Center in New York on September 11th, 2001, many first considered it an accident, because the alternative was simply unthinkable. Those who can revise their assumptions as the evidence changes, confront the new reality and recognise the dangers of denial and unfounded optimism are better positioned to act and recover.

2. Prepare Before Crisis Strikes (*Delay*)

Thoughtful but delayed action in the early stages of a crisis can result in missed opportunities, forcing teams to play catch-up at critical moments. Crafting a detailed crisis management plan well in advance can prevent these costly delays: determining key individuals and responsibilities for effective crisis response; establishing lines of communication for efficient information sharing; and creating a playbook for documentation and institutional memory.

3. Delegate Responsibilities (*Flight*)

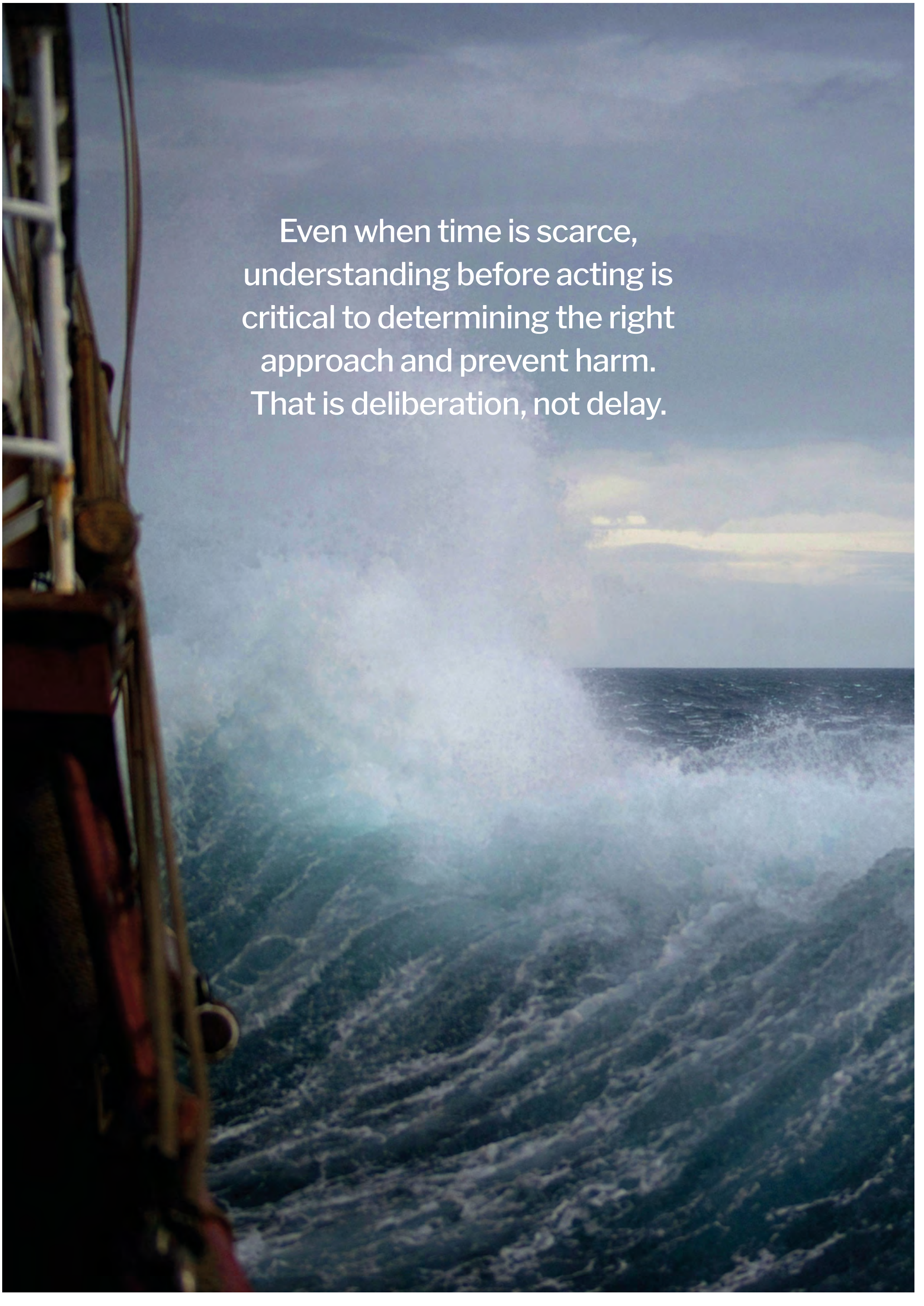
Some leaders may attempt to "control" the situation, believing that, because they are responsible for a team's performance, they must make—or at least sign-off on—every decision. Other leaders may do the opposite, shirking responsibility onto others in fear of accountability for their team. A useful model for crisis leadership is that of an orchestra conductor: someone who does not play every instrument but rather remains responsible for guiding the orchestra and coordinating the players.

4. Constructive Activity (*Paralysis*)

It is not enough to have lists of assigned responsibilities and established communications channels. From the moment a crisis strikes, ensuring everyone has meaningful work to do is essential to preventing paralysis, even if some tasks may seem menial at the time.

5. Practise Interoception (*Panic*)

According to the Open Encyclopedia of Cognitive Science,[5] interoception refers to "how the brain senses, consciously or unconsciously, physiological signals coming from inside the body." In a high-stress situation, consciously noticing changes in one's heart rate or breathing can provide a practical way to recognise one's own stress response and regain focus before acting.


Even when time is scarce, understanding before acting is critical to determining the right approach and prevent harm. That is deliberation, not delay.

6. Respond with Purpose (*Reacting*)
A simple litmus test to know if we are responding purposefully is to ask two key questions: "What *caused* you to do it?" and "What is your *purpose* for doing it?" If you are unable to identify a response for the second question, you may be allowing crisis to dictate your actions. Asking yourself (and others) the purpose for doing something can help avoid costly, reactive decisions.

UNDERSTANDING BEFORE RESPONDING

Our brains are inclined toward action whenever we encounter a problem. Organisations tend to reinforce this instinct by rewarding quick and decisive actions against a given problem. However, acting before understanding the nature of a problem risks worsening the situation. This can be illustrated using the scenario of a sudden fire in a kitchen.

For many, it is natural to think that, when a fire erupts, throwing water at it would extinguish the flames. In a video I show to participants in my Crisis Leadership course for Sea-Change Partners, a kitchen staff acted on precisely that assumption.

That response might work in many circumstances—but not when the fire is a grease fire.

In the video, throwing water on the grease fire caused it to erupt, resulting in casualties for three of the kitchen staff, including the person who had acted quickly.

Even when time is scarce, understanding the challenge before acting is critical to determining the right approach and preventing further harm. That is deliberation, not delay.

DIAGNOSING A CRISIS

We can use the tools of Crisis Diagnosis to understand how to approach a crisis and determine the next steps. Much as a doctor can diagnose illness or injury because human bodies share a common anatomy, crises also have recurring elements. Natural disasters, industrial accidents and even political conflicts differ greatly, but they can still involve similar forms of time pressure, high stakes, uncertainty, emotion and consequential decisions. Identifying those elements gives us a diagnostics checklist for a more purposeful—and less reactive—response.

WHAT IS A CRISIS?

The American Heritage Dictionary defines a crisis as the following (with emphasis added):

1. A crucial or **decisive** point or situation; a turning point.
2. An **unstable** condition, as in political affairs, involving an impending abrupt or **decisive change**.
3. A sudden change in the course of a disease or fever.
4. An **emotionally stressful** event or a traumatic change in a person's life.
5. A point in a **story** or **drama** when a conflict reaches its highest tension and must be resolved.

The definition itself offers clues as to the elements that make a crisis a crisis. Here are the elements that constitute the anatomy of any crisis:

- ✓ **Time** Pressure
- ✓ High **Drama**
- ✓ Important **Decisions**
- ✓ High **Stakes**
- ✓ High **Emotion**
- ✓ Great **Uncertainty**
- ✓ Subject to **Perspective**

CRISIS DIAGNOSTICS CHECKLIST

For each of these elements, one can identify a series of diagnostic questions and qualities. Doing so turns diagnosis into productive work that can also be delegated across a team.

Time

Time is a major source of pressure in a crisis and often becomes a measure—*real or assumed*—of performance.

- How much time remains:
  - Before the "story" gets out; or
  - Until consequences hit?
- How much time is required:
  - To determine the options and make decisions (*deadlines*);
  - To *implement* a strategy; and
  - For actions to take effect (*lag time*)?

Drama

Drama refers to public visibility of or interest in the crisis and the people or organisation(s) involved. Ask:

- What story are people hearing (the "*narrative*")?
- Are people in your team "seized" by the drama (*internal attention*)?
- What are the gaps between perception and reality (*accuracy, rumours*)?
- What is the bystander behaviour?
- Is there great suspense (fed by *high stakes & uncertainty*)?

Decisions

Often, a few "big", fateful decisions must be made by a few, high-level individuals.

- What are the necessary decisions to be made?
- *Clarity* is essential
  - Both in making decisions (chain of command)
  - and in explaining decisions to others
- Process & responsibility is important
  - Beware *groupthink*, have safeguards
- *Creativity* can be helpful

Stakes (Consequences)

The stakes in a crisis are often particularly (and unavoidably) high, and their consequences can extend well beyond the immediate moment. Consider:

- Multi-level: Personal, organisational, perhaps widespread
- Factor in evaluation (severity)
- *Macro-consequences*: wider world
- *Micro-consequences*: affecting next steps in crisis management

Emotions

Emotions often run high in a crisis, which can amplify the drama and stakes, and may intensify with uncertainty. They can:

- Have their own consequences (emotions take a practical, physical toll)
- Be a potential distraction or resource (positive emotions, such as inspiration, solidarity)
- Demand separate attention
- Require a separate skill set

Uncertainty

It is important to distinguish between "known-unknowns" (things we know we don't know) and "unknown-unknowns" (things we don't know that we don't know). Consider how uncertainty can:

- Change the quality of decision-making under pressure
- Affect emotion, as it increases stress
- Be *tractable* (can certainties be introduced into the situation?)
- Be *subjective* (some know, some don't) and *relative* (e.g. to expectations, experience)

Perspective

Different actors can perceive the same situation differently. Taking those different perspectives into account can help define the subjective *scope* of the challenge and support consensus in decision-making. Consider:

- Is this a crisis for me/us?
- Are there too few perspectives that can lead to *tunnel vision*?
    - Multiple perspectives always exist (e.g. actors vs. audience)
    - Might be essential for *consensus* when making *decisions*
- Are these perspectives distinct from *denial* or *wishful thinking*?

CREATING A CONCERTED RESPONSE

For each of the elements of Crisis Anatomy, individuals or small teams can be assigned responsibility for identifying and monitoring what is changing. For example, one team can track how much time certain actions will take, and what consequences may arise in that period. Another team can identify the key decisions that will need to be made, and by whom. Meanwhile, another team monitors the critical uncertainties and determines the information that is needed. By working in tandem, teams can build a more complete picture of the crisis while avoiding the paralysis that comes from waiting for one person to process everything. Delegating in this way helps leaders shape a response that is thoughtful and timely without allowing the crisis itself to dictate every action.

BUILDING CRISIS AGILITY

Resilience is not just a capacity. It is a skill set that can be learned, taught, practised and improved over time. The truly resilient are those who are inclined to rise to the challenge when a crisis hits and are capable of acting thoughtfully, purposefully to deal with whatever comes their way. Training in Crisis Diagnosis and seeking opportunities to gain valuable experience in crisis situations (under circumstances that reflect one's abilities) are the two best ways to build Crisis Agility. That is resilience in practice. AMI

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For a list of references to this article, please visit https://smu.sg/SMUAMIAug2026 or scan the QR code below.

CLEAN, GREEN AND PRACTICAL

Jeremy Lee highlights the importance of creating value for customers beyond the sustainability label.

Jeremy Lee founded SimplyGood in the belief that cleaning solutions could be truly eco-friendly. With the goal of reducing single-use plastics, SimplyGood, established in 2021, offers dissolvable cleaning tablets and sheets made with natural, plant-based ingredients. Speaking with Erin Lee from SMU's Office of Impact, Jeremy reflects on the challenges faced, the varied approaches to different target segments and what it means to be an impact-based business.

How did SimplyGood come about? Why did you decide to focus on sustainable cleaning products?

Before SimplyGood, I ran a food waste startup called UglyGood, which I started in 2017 while studying at Singapore Management University (SMU). At the time, I realised how big of a problem food waste was in Singapore, and I wanted to address that with my first business. We took discarded food and upcycled them into usable products, such as using orange rinds to create natural cleaning enzymes.

That brought me to where I am today with SimplyGood. When UglyGood exited in 2021, we found many inefficiencies with our supply chain. Despite the intention of reducing waste through our products, we were using a lot of water and plastic to create them—in fact, many cleaning solutions are 96% water. SimplyGood came about as a way to remove those inefficiencies while adhering to the original mission of being sustainable.

Part of the inefficiencies, too, came from shipping costs. Shipping costs accounted for 10% of our cost structure, and when we removed water and plastic bottles from the equation, our operating cost dropped significantly; it became several times cheaper to ship cleaning tablets and other dry products compared to cleaning solutions. In some ways, SimplyGood was born to solve one of my old business problems while staying true to my original goals with UglyGood.

SimplyGood was founded during the COVID-19 pandemic. How do you think that shaped the way you run your business and make decisions?

The pandemic was certainly an interesting episode for us. We had to really focus on the fundamentals. Back then, especially when we were starting out as a new business, there was a lot of uncertainty in the market. We had to deliver exceptional value to our customers, and sustainability alone wasn't a very strong selling point.

Not many customers were willing to support us in the beginning: although there was a market for sustainable products, it wasn't big. Presenting ourselves as just sustainable was not going to be enough to sustain our business. So that got us to think about ways to create value for our customers: how could we innovate on our products? How could those products deliver value beyond sustainability?

We ensured our products were natural, safe and non-toxic—attributes that people were willing to pay for. The eco-friendly element was a cherry on top: our products are safe and non-toxic, *and* good for the environment. Reframing that thinking really benefitted us.

What was the key challenge you faced in getting consumers to consider and switch to SimplyGood? Did you have to change how you positioned the brand or marketed your products?

During the COVID-19 pandemic, environmental sustainability was not top of mind for everyone. Although there were consumers who were more environmentally conscious, safety was the key concern for many. We then considered changing our marketing position, because we realised there was much more value we were creating than just green. Our products were made of safe and natural materials; they were incurring lower cost structures; and were significantly lighter and smaller than traditional cleaning solutions, making them far more convenient. In a space-constrained city like Singapore, these were the features that appealed more strongly to consumers.

When we began positioning ourselves this way, we were able to connect better with consumers. It was better than simply shouting that we were eco-friendly and reducing carbon emissions. Ultimately, it was the practical everyday benefits of the product that resonated with consumers, not the long-term benefits to the environment.

Did you position yourself differently with the B2B segment?

We began offering our products to B2B customers in our second year. Sustainability was gaining momentum: mandates were emerging, funds were talking about it and even the government was trying to push the sustainability agenda. But when we tried to sell our products to other businesses, they did not support that enthusiasm with their purchases. For them, the value was more from the association with sustainability, and the ability to write a good report around it. That was the practical truth on the ground at the time.

Although we had found a few good stakeholders to support us, there was limited growth and it was difficult to build a business around ESG alone. Much like with the B2C segment, we had to tweak our offerings to something more enticing. In this case, it was cost savings.

When we engaged with potential B2B customers in the initial months, one of the first things we would be asked was, "Are you cheaper than my current option?" It was a key consideration for them, especially for cleaning companies who optimise the bottom line significantly.

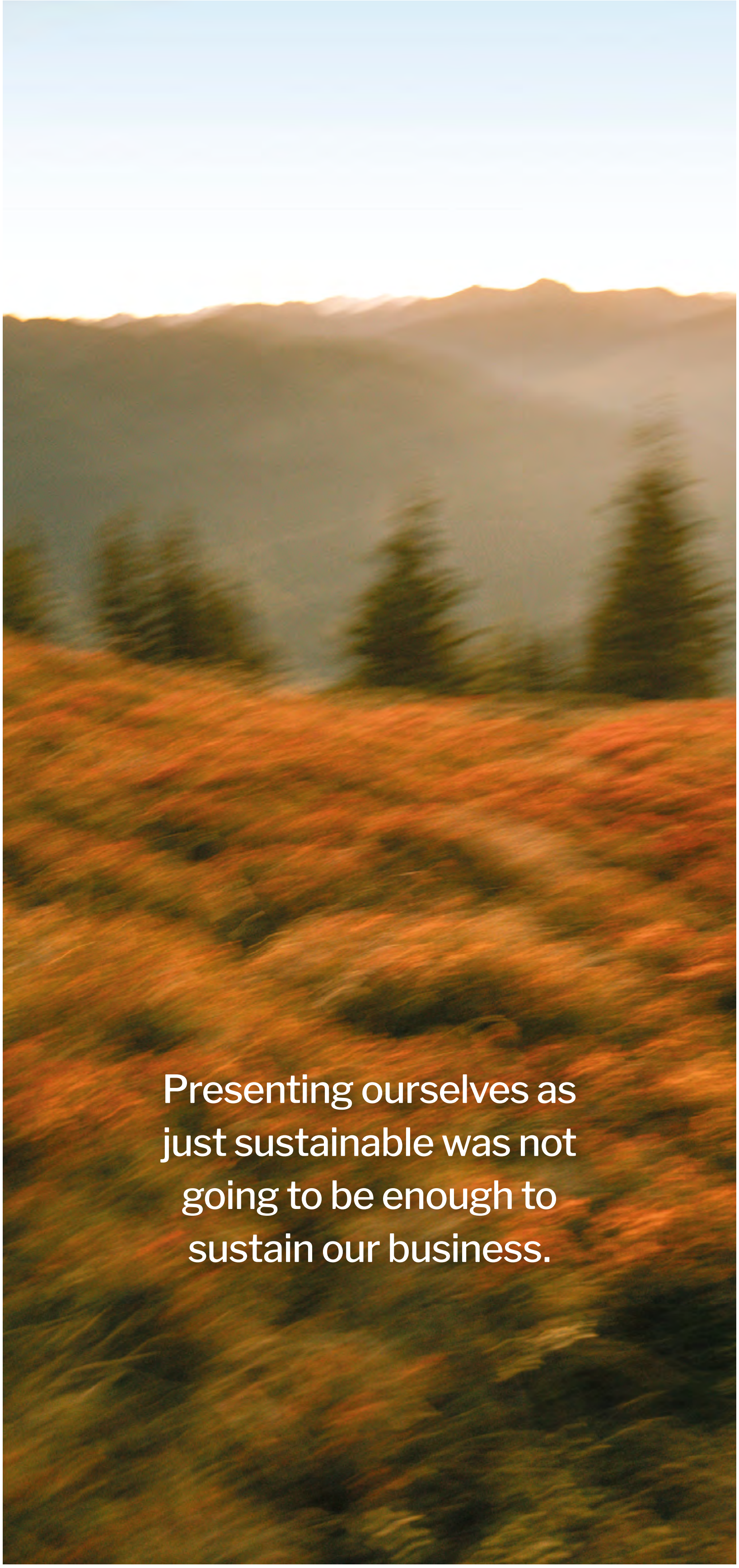
This was one of the key differences we learned about the B2B segment, in that we needed to frame the practical benefits of our product differently for businesses and individual consumers. Where direct consumers cared about safety, convenience and cost, businesses considered cost savings and warehouse storage savings.

The way in which products are framed, or rather, the way in which the *value* of products is framed, has to be right in order for the customer to adopt it. Although B2B consumers are not looking explicitly for eco-friendly products, they consider how those options can be marketed as part of their CSR efforts. Sustainability today must be practical for people to adopt it, at least at our current stage of progress.

You have since expanded to countries such as Malaysia, Australia and New Zealand. How did you choose those markets, and what obstacles did you face scaling up?

When we looked at expansion, we were very conservative. We were dipping our toes into the countries you mentioned, putting up a small budget to see how those markets would react and determine if there was a product-market fit (PMF). Whenever we go into a new market, we want to ensure there is PMF, because what works in Singapore may not work elsewhere.

There are a number of things we consider before entering a new market. The first is whether the market is ready for a product like SimplyGood. Is there acceptance or an inclination of eco-friendliness in the market? Are there competitors in this space that are offering similar products? These are usually signs that the market is ready for the kind of products we are offering. For example, Indonesia is at the forefront with its ban on single-use plastics, and similar signals can be found in countries like Malaysia.



The second thing we consider is the unique economics of the market. Is there a large enough market size? With our brand positioning, does it fit the purchasing priority value and GDP per capita? These were key unit economic factors we had to take into account.

The third thing we look at is localisation. How could we adapt ourselves and our products for the local market? Certainly, markets where English was the primary language were easier to set up, but in markets like Malaysia and Indonesia, or in countries in the Southeast Asian region, there is a lot of cost involved in localisation.

Do you find that there is often a trade-off between cost and sustainability for consumers, especially for B2C consumers?
I think that it is less of a trade-off and more of a difference in priorities. As I mentioned earlier, B2B customers tend to think more about cost while direct consumers prioritise practical benefits.

It's also about additional value creation. For instance, in the B2B context, if there was additional marketing, could your products help them earn more revenue? Would it allow them to secure more contracts? Would it get them certifications? Those are the considerations that B2B consumers go through.

For the consumer segment, it's a lot more targeted at the individual level. Value creation comes in many forms on the consumer market, and it is not limited to price. That is what we have found with the segment we have chosen to market towards. For them, it is really about convenience and safety for the family.

Recently, I have found that the consumer market is more educated and open, and they want to support brands with a purpose. The narrative of a commodity with no purpose simply does not fly anymore. People care about how the products are made and the stories behind them. That to me is really interesting, and certainly very different from the B2B segment.

You have described SimplyGood as an impact-based business. What do you think makes running an impact-based business different from a traditional for-profit business? Can organisations that are not social enterprises become impact-based businesses?

I think one misconception is that we are a non-profit organisation, that we do business out of goodwill. As a social enterprise, we need to be highly profitable to survive, and all business fundamentals still hold true. You need to know your EBITDA margins, your growth trajectory and your team. You don't survive by donations or funding; you survive like all other traditional businesses. I think that is a key misconception people often have when they hear the term "impact-based".

Perhaps the key difference between an impact-based business and a traditional business is when they see success. Certainly, a traditional business could say that their business model made a certain amount of revenue and that they will invest in a CSR programme, but that is not intrinsically tight. To me, an impact-based business is when the business model is built with a DNA of impact. Using UglyGood and SimplyGood as an example, for every additional unit of product we sell, our team does not have to establish a separate CSR programme to contribute positively to society, because our products help to reduce the amount of plastic being dumped into oceans. We are naturally reducing carbon emissions by introducing these products. I think that is the main differing factor in having an impact-based approach, in that impact is incorporated deep into the business model.

Traditional organisations, even if they are not social enterprises, have the potential to be impact-based businesses. Business models are dynamic and fluid, changing with each six-month or annual financial plan. If your company is in banking, it does not mean that your business model cannot positively impact the community or environment. It is simply a matter of how that impact is baked into the business model, as well as the positive externality you're trying to create. I think there is a lot of room for businesses to have an impact-based model altogether.

What lessons of resilience have you learned from leading SimplyGood that you can share with budding entrepreneurs?

The life of an entrepreneur is full of mistakes, painful lessons and lots of failure. When you choose the path of entrepreneurship, things are not going to be easy. It will be full of uncertainty, and you will constantly face failure head-on. But that is the key, isn't it? If you want to be an entrepreneur, perseverance is absolutely necessary. That to me is the main success metric of entrepreneurship. You may be intelligent, have good connections and plenty of resources, but at the end of the day, it is about how long you can take painful lessons for and whether you continue going down that path.

Of course, it is important to also learn from your mistakes, to reiterate and pivot when the time calls for it. But there is definitely a strong element of resilience in this path. The key lesson from me is to just keep at it. As you solve more problems, form larger teams and learn more about the market, things will get better. AMI

BRINGING AUDIT QUALITY INTO VIEW

Associate Professor Themin Suwardy's practice-led work has helped shape conversations around audit quality in Singapore, bringing sector-wide evidence into view and giving audit committees and firms a more structured basis for looking beyond price and reputation.

A published set of financial statements presents a finished picture. The figures have been checked, questions resolved and corrections incorporated before the accounts reach investors. Less apparent is the process that produced that result: the errors identified, the adjustments proposed by auditors and the judgements made before the statements were finalised.

These corrections matter because they can reveal weaknesses in how financial statements are prepared. Financial statements are prepared by company management; the auditor's role is to provide an independent opinion on them. Yet a 2013 survey by Singapore's Accounting and Corporate Regulatory Authority (ACRA) and the Association of Chartered Certified Accountants (ACCA) found that approximately half of the financial statement preparers surveyed believed primary responsibility for preparing the accounts lay with the auditor.[1] When that boundary blurs, audit risks being treated as the final clean-up exercise rather than an independent check on a company's reporting. Weaknesses in the finance function remain hidden because the auditor catches them before publication.

For boards, there is a second challenge. Audit committees are responsible for overseeing financial reporting and evaluating the external auditor, but the quality of an audit is difficult to observe directly. A clean audit opinion tells them that the final statements are not materially misstated; it says nothing about the experience of the engagement team, how much senior attention the audit received, what problems were found or how effectively high-risk areas were handled. Without comparable information, price and firm reputation can become convenient proxies for quality.

Over more than a decade, practice-led research involving Associate Professor Themin Suwardy of Singapore Management University (SMU) has contributed to a clearer understanding of the audit process and how audit quality can be assessed. It developed through two connected strands. The first was sector-wide research that opened the black box of audit adjustments. The second was practical work with ACRA and the profession that gave audit committees a common framework for discussing audit quality with their auditors.

Both strands fed into a wider, ongoing process rather than standing apart from it. ACRA draws on inspection findings, commissioned research, industry consultation, international benchmarking and the experience of practitioners before revising regulatory tools or guidance. Suwardy's work was one input within that wider process. His contribution lay in the evidence generated through the research and in his role as a trusted intermediary between ACRA and the audit firms. This made it possible to examine sensitive data across the sector and translate the findings into questions that boards and firms could use.

OPENING THE BLACK BOX OF AUDIT ADJUSTMENTS

Audit adjustments are the corrections proposed during an audit before financial statements are issued. Studying them across many companies, they can reveal where reporting errors recur, whether those errors are factual, judgemental or classificatory, and how much remedial work is being left until the audit. At the time, however, there was no publicly available sector-wide picture of these adjustments in Singapore. The information sat inside individual auditor-client relationships and was among the most commercially sensitive data generated during an engagement.

To understand what these patterns might reveal across the sector, ACRA needed access to engagement-level data from audit firms. But firms were understandably reluctant to provide identifiable information directly to the regulator responsible for inspecting them. To develop a sector-wide picture, ACRA commissioned a study for audit adjustments and encouraged firms to participate. Access to the data was made possible through a tri-party arrangement involving ACRA, the participating audit firms and Suwardy as an independent academic intermediary. Working under strict confidentiality arrangements, he anonymised and analysed the data, reporting only aggregated findings to ACRA and the profession.

Suwardy's position as an independent academic was central to this arrangement. It gave firms confidence that the information would be handled appropriately, while allowing ACRA to obtain a sector-wide view that its inspection work alone could not provide. This tri-party arrangement made Singapore's first empirical study of audit adjustments across listed companies possible.

The first report, published in 2014 and co-authored by Suwardy, Jean Lin Seow and Chu Yeong Lim of SMU's School of Accountancy, was described by ACRA as the first study of its kind in the world.[2] It found that most of the adjustments were factual or misclassification errors. This suggested that a considerable share of the errors being corrected by auditors could have been identified earlier in the financial reporting process.

The study gave ACRA an empirical basis for looking beyond the quality of the audit itself to the quality of financial reporting before the accounts reached the auditor. In its tenth Practice Monitoring Programme Public Report, ACRA said the findings had directed it to address financial reporting issues upstream.[3] Speaking at the 2014 Public Accountants Conference, then Senior Minister of State for Finance Josephine Teo said ACRA would use the evidence to engage audit committees, directors and investors on the root causes of audit adjustments.[4]

A second study, published in 2022, examined whether the patterns had changed. It analysed 22,051 proposed adjustments from 412 listed companies over three financial years. The study also included a survey of close to 280 audit committee chairs and finance leaders.[5] The purpose, as ACRA described it, was to identify common adjustments and areas for improvement across the financial reporting value chain, not to rank individual companies or firms.

The Singapore Institute of Directors subsequently referred to the research in its 2022 mini-guide for audit committees, encouraging boards to look at what recurring adjustments might say about their own company's finance function, rather than treating them only as evidence of work performed by the auditor.[6]

A BETTER BASIS FOR DISCUSSING QUALITY

The audit adjustments studies made problems in the financial reporting process easier to identify, yet audit committees still needed a practical way to assess the quality of the audit they were buying.

In 2015, ACRA introduced Singapore's Audit Quality Indicators (AQI) Disclosure Framework, the first of its kind in Asia.[7] It set out eight indicators that audit firms could disclose when discussing their appointment or reappointment with audit committees. Rather than producing a score or prescribing which auditor a board should appoint, the framework provided a common basis for examining the resources, experience and quality controls behind an audit and asking more informed questions about them.

Suwardy worked with CPA Australia and the ACRA team on the accompanying guide, *Deepening the Audit Quality Conversation*.[8] More than 70 audit committee members took part in five focus-group discussions that informed the work. The guide helped translate a regulatory disclosure framework into practical questions for boards and firms: Does the engagement have sufficient senior involvement? Is the team experienced in the company's sector? Are planned hours appropriate to the risks? What do internal and external inspection findings indicate? How does staff turnover affect continuity?

ACRA has published industry-average AQI data since 2016, giving committees a reference point against which to weigh the information provided by individual firms. In 2025, ACRA asked Suwardy to undertake a ten-year review, drawing on a survey of audit committee members, further focus-group discussions and a comparison of Singapore's framework with those used in the United Kingdom, Malaysia, South Africa, Switzerland and Chinese Taipei. The revised framework, which applies to audits of financial statements ending on or after 31 March 2026, expands the original eight indicators to ten (see Box 1).[9]

AQI DISCLOSURE FRAMEWORK: WHAT AUDIT COMMITTEES NOW LOOK AT

People and culture
Experience · Staff oversight · Attrition rate · Culture survey (*new*)

Audit delivery and support
Audit hours · Quality-control · Training · Use of technology (*new*)

Quality outcomes
Inspections · Restatements (*new*)

Introduced with eight indicators in 2015, the framework was revised to ten in 2025. The revision added use of technology, culture survey and restatements; revised the audit-hours indicator; and removed compliance with independence requirements as a standalone indicator.

BOX 1: The expanded set of AQIs from eight to ten, following a revision of the AQI Disclosure Framework in 2025.

Rather than scoring auditors or prescribing appointments, the framework provided a common basis for examining and asking more informed questions about an audit's resources, experience and quality controls.

The revised framework shows that the AQIs have remained in use and have been reviewed as audit practice has evolved. ACRA's repeated engagement with Suwardy across the adjustment studies and the AQI review also points to a sustained professional relationship.

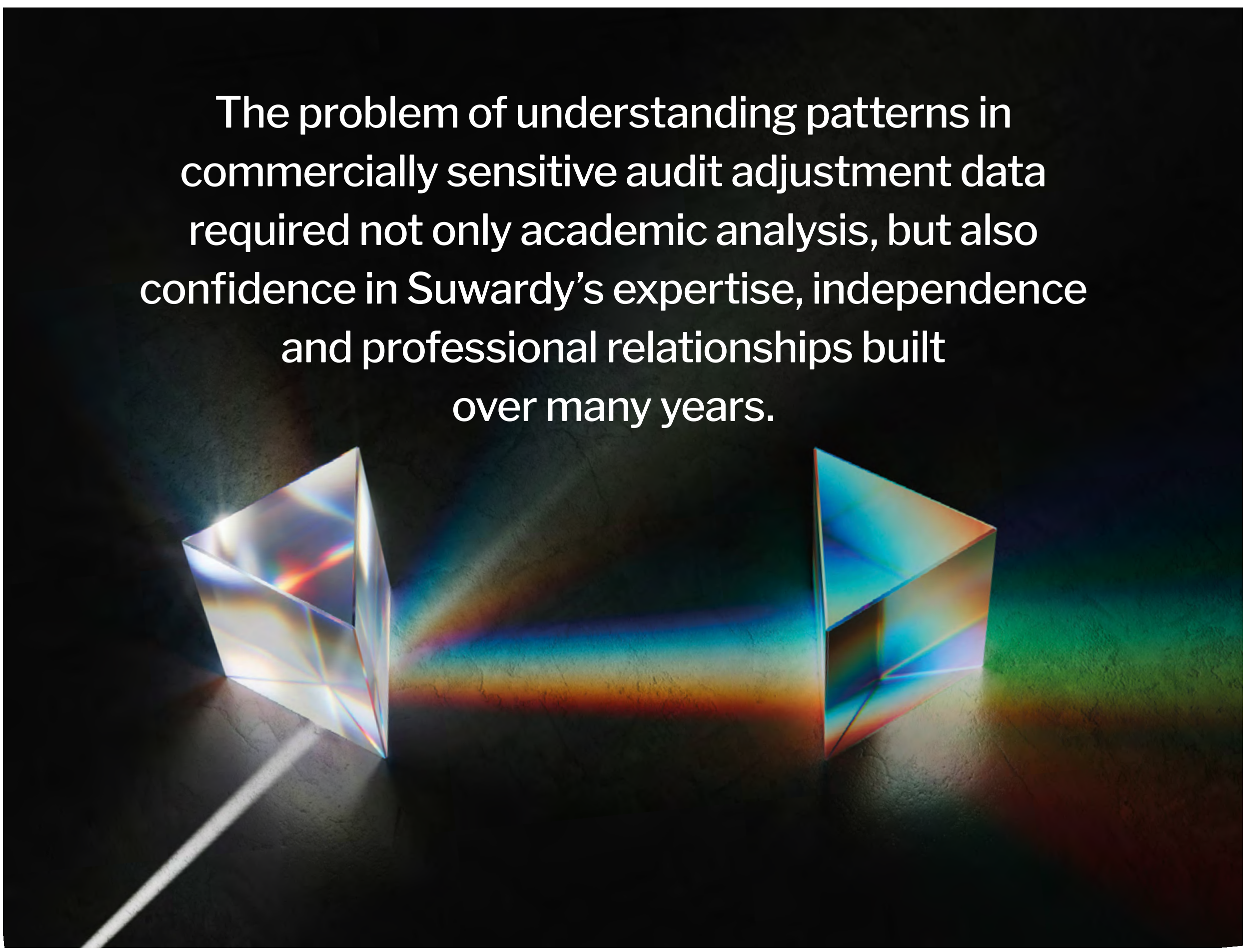
WHAT BECAME POSSIBLE

The most direct evidence of change lies in the use of the AQI framework. In ACRA's 2025 review, 83% of the audit committees surveyed were aware of the framework and had considered the recommended indicators when measuring and evaluating audit quality. Experience was the indicator referred to most often, followed by audit hours and staff oversight.

This does not tell us whether committees appointed a different auditor as a result, or whether audit quality improved because of the framework. It does, however, show that many committees were looking at a broader set of factors than price and reputation when considering the quality of an audit. For audit firms on the other side of the conversation, the framework provided a consistent way to explain the people, time and controls supporting an engagement.

The adjustment studies made a different contribution. Their impact is less easily traced to a particular decision or regulatory measure. They produced the first aggregated view of corrections being made during audits of Singapore-listed companies and showed what these patterns might reveal about the wider financial reporting process. ACRA's own account confirms that the first study informed its decision to focus attention further upstream.

ACRA's decision to engage Suwardy again for the second adjustment study and the ten-year AQI review suggests sustained confidence in his ability to undertake sensitive, practice-facing research.



WHY PRACTICE-LED RESEARCH WORKS DIFFERENTLY

The work began with a practical problem faced by the regulator and the profession: how to understand patterns in commercially sensitive audit adjustment data without compromising the confidentiality of firms and their clients. Addressing it required academic analysis, but access to the data also depended on professional relationships built over many years and confidence in Suwardy's expertise and independence.

The two strands of work made different contributions. The audit adjustment studies gave ACRA and the profession sector-wide evidence about recurring reporting errors and where they were being corrected. The AQI work helped translate a broad concern about audit quality into a framework that audit committees and firms could use in their discussions.

Neither strand provides a complete measure of audit quality. Good auditing continues to depend on professional judgement, scepticism, firm culture, regulatory oversight and the quality of each engagement. Similarly, the evidence does not establish that the framework changed auditor appointments or improved audit quality. What it does show is that audit committees now have a broader and more consistent basis for discussing quality, while the adjustment studies gave ACRA a clearer view of patterns across listed companies.

The ability to examine its own practices is an important part of sectoral resilience. It enables a sector to identify recurring weaknesses, learn from shared evidence and adapt as risks and practices evolve. Suwardy's contribution lies in helping create the evidence and trusted arrangements that support this kind of self-examination within Singapore's audit and financial reporting ecosystem. AMI

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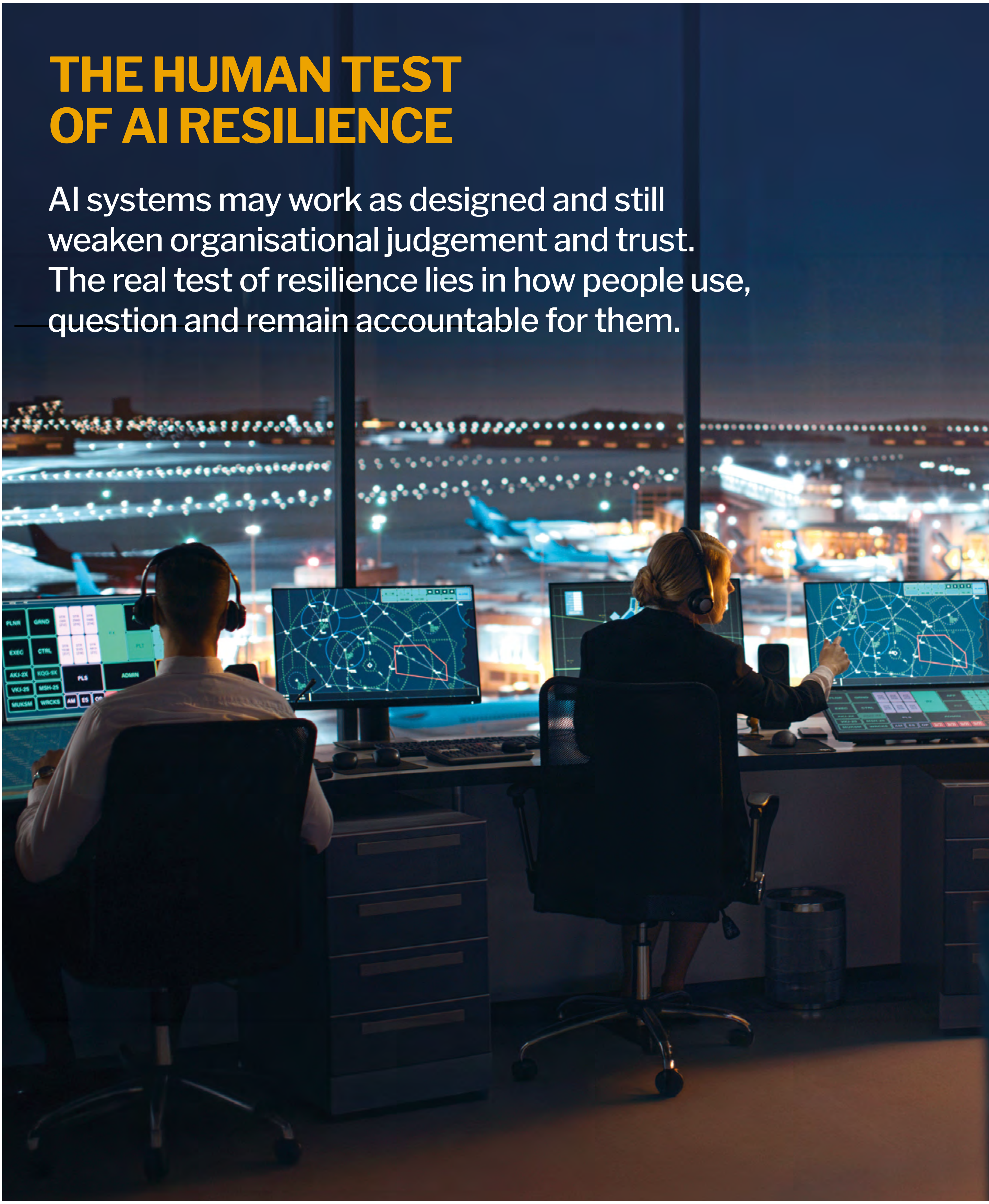
by Jack McGuire

THE HUMAN TEST OF AI RESILIENCE

AI systems may work as designed and still weaken organisational judgement and trust. The real test of resilience lies in how people use, question and remain accountable for them.



1 *AI adoption is more than a technical implementation challenge. It changes how people exercise judgement, assign responsibility and understand their own expertise.*

2 *Resilient AI adoption requires leaders to anticipate how people will interpret a system before rollout, prepare them to exercise judgement with it and adapt governance as real patterns of use emerge.*

3 *As organisations learn to live and thrive with AI, adaptation depends on understanding how people actually behave—not how they ought to behave—and designing AI adoption around it.*

A regional bank is preparing to introduce an AI-assisted credit assessment tool for small-business lending. The system has been tested for months. It can process applications faster than human officers, flag inconsistencies in financial records and draw on alternative data to assess businesses with thin credit histories. For leaders, the business case seems obvious—faster decisions, lower processing costs and wider access to finance.

Then the tool meets the organisation.

Some loan officers worry that the model will make their judgement less valuable. Others quietly ignore its recommendations when they do not match their intuition. A few rely on the model too heavily, treating its input as a decision rather than an aid to decision-making. Customers question why a long-standing relationship manager can no longer explain a rejected application. Compliance teams want clearer documentation. Branch managers, under pressure to meet approval targets, begin to differ in how strictly they follow the model's guidance.

Nothing dramatic has happened; the system has not crashed, the model has not failed. Yet, the organisation is already becoming less coherent in how it uses AI.

This is the central challenge of AI resilience. The question is not whether an AI system is accurate or efficient. It is whether the organisation can absorb it into work without eroding trust, accountability, human agency or capability. Indeed, AI changes what tasks get done, but it also changes who gets heard, what counts as expertise, how people justify decisions and where responsibility seems to sit when outcomes are contested.

Though resilience is often discussed in relation to things like supply chains and geopolitical shocks, in the age of intelligent tools, it also carries an internal behavioural dimension. Organisations must adjust their approach to AI as it changes how people think and work.

A resilient AI strategy therefore rests on three disciplines: *anticipate* how people will interpret AI use before deployment; *prepare* employees to exercise judgement with AI; and *adapt* governance as real patterns of use emerge.

AI ADOPTION AS A BEHAVIOURAL CHANGE CHALLENGE

AI is appealing because it promises control amid uncertainty. It can detect patterns in volatile markets, optimise logistics across congested networks and help organisations respond more quickly to sudden changes in demand. The more complex the environment becomes, the more tempting it is to believe that better prediction will produce better control.

Yet many AI initiatives disappoint because they are built around a thin understanding of adoption. It is thought that people will accept a tool if it is presented as useful and shown to have real benefits. Human behaviour, however, rarely follows this script.

A doctor for instance does not evaluate a diagnostic model only by its accuracy. They ask what it means for clinical judgement or what it means for their liability. Likewise, a public officer using automated triage must still face the citizen seeking an explanation for how their case was routed. These are not minor implementation details, but are, in fact, the substance of adoption.

This is why AI adoption should be understood as a behavioural change management effort.[1] AI systems increasingly recommend, rank, interpret, allocate attention and sometimes act with a degree of autonomy. They enter the terrain of expertise. They often look authoritative even when their limits are poorly understood. They can also make employees feel that the knowledge and discretion that once defined their work are being displaced.

A behavioural approach to human-centred AI begins from the premise that people are not perfectly rational users.[2] They bring habits, fears, pride, biases, professional identities and social concerns to every interaction with intelligent tools. Even with full transparency and a clear business case, adoption can still falter if the human factor is not taken into account. Designing for the predictable messiness of human behaviour therefore forms the foundation of resilient AI adoption.

ANTICIPATION: PERCEPTIONS BEFORE THE ROLLOUT

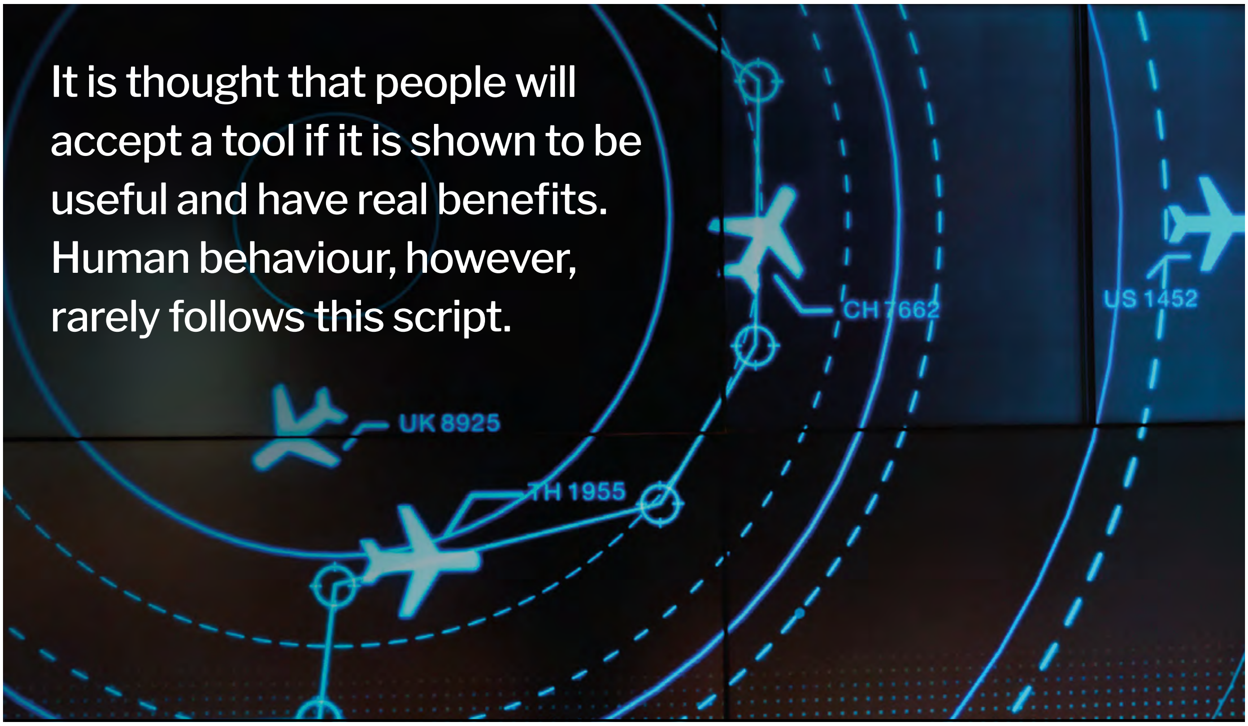
Before an AI system goes live, leaders usually know a great deal about the technology: they know the vendor, implementation cost, integration plan, data requirements and expected (or rather, supposed) efficiency gains. They may, however, know far less about the social meaning of the system they are about to introduce.

That meaning matters because an AI tool described as "decision support" might be seen as a signal that management no longer trusts employees' judgement. A performance dashboard to promote sales may be experienced as surveillance instead of motivation. A recommendation engine could be intended to reduce errors, but employees quietly wonder whether they will be blamed for following the system, or overriding it.

These interpretations are early evidence of where the organisation is vulnerable. AI can improve some elements of performance while also unsettling the human conditions that make broad performance sustainable. When employees experience AI as replacing rather than supporting judgement, adoption becomes fragile. When customers, clients or citizens encounter decisions shaped by AI, they may still expect reasons that a human can explain and defend. The risk, then, is not that people reject AI, but that employees—and by extension the organisation—are unprepared for how AI reshapes roles and expectations.

The practical exercise here is not stakeholder engagement in the generic sense—it is behavioural anticipation. Leaders should identify the moments where AI is likely to disturb the status quo. A model that forecasts inventory needs raises different concerns from one that screens job applicants, assesses loan eligibility or allocates healthcare resources. The more directly a system affects people's opportunities or dignity, the more important it becomes to anticipate not only how accurate it is, but how people will respond to its use.[3]

A useful test is to examine how a serious disagreement between an experienced employee and



the AI system would unfold. The employee believes the recommendation is wrong. The model appears confident. A manager is watching. A customer is waiting. What happens next? If the employee cannot understand the basis of the recommendation, challenge it safely or escalate the case without appearing obstructive, the organisation has not designed for AI resilience; it has designed for compliance on the surface and confusion underneath. Anticipation is the discipline of discovering these weak points before they become habits of avoidance or over-reliance. This, in effect, is what resilience means here: the organisation's capacity to absorb friction between human judgement and AI output without fractures emerging.

PREPARATION: RECOGNISE LIMITATIONS, REHEARSE JUDGEMENT

Preparation is often reduced to training—learning what to click and type on a given checklist of different scenarios. This may be enough for ordinary software, but it is rarely enough for AI.

When AI enters judgement-heavy work, people need more than instructions—they need practice in deciding how much weight to give the system, when to question it and how to explain decisions shaped by it.

This is challenging because people can go wrong in opposite directions. Some become sceptical after seeing an algorithm make a mistake, even when it performs better than humans on average.[4] Others defer too readily because the output appears quantified, is produced almost instantaneously and looks sophisticated or difficult to challenge.[5] In a busy workplace, a checklist approach for what to do can become the path of least resistance—a quick, convenient answer to a problem that employees have neither time nor bandwidth to address.

Good preparation surfaces these tendencies. Consider a hospital introducing an AI imaging tool. A thin version of preparation would announce that the system has been validated and provide a short training session. A stronger version would show clinicians where the system performs well, where it struggles, how uncertainty is displayed and when human review is mandatory. This would allow clinicians to compare their judgement against the model's output in practice. It also gives them a sense of when they need to be *even more* vigilant. In banks, relationship managers would be able to explain AI-supported credit decisions without hiding behind the model. In logistics, planners can understand where local knowledge should override AI-powered recommendations. Interfaces should also be treated as behavioural environments—how an interface is designed can affect how users make decisions. Default options, user experience, presentation of social norms can all steer users into a particular direction. The key question is whether interfaces are equipped to help employees engage meaningfully, beyond simply being kept in the loop. Preparation therefore means building the conditions for judgement.

ADAPTATION: OBSERVE, LEARN AND ADJUST

The launch of an AI system is often treated as the end of implementation. In reality, it is the start of discovery. Only after launch does the organisation learn how people actually use the system, especially when targets, time pressure and customer demands are all in play.

People adapt around AI. They create shortcuts, discover exceptions, develop trust or distrust. They find ways to satisfy the system's requirements while preserving old routines (such as by performing boundary work). They may use AI for purposes beyond its original design, or they may become dependent on it in ways that weaken underlying capability.

This is where governance often falls short. Many organisations have approval processes, validation checks and policy documents. Though necessary, they typically capture the system at a point in time. Behaviour is constantly evolving. As an example, a productivity tool might gradually change expectations about workload and availability, and so workers might evolve their use patterns to match growing expectations about what they are supposed to produce.

Resilient organisations treat actual use as evidence. By observing the various ways employees engage, or avoid, AI systems, organisations can discover whether and how AI unintentionally changes the meaning of good work.

Employees often pick up on this change in meaning before formal governance systems do. A nurse could notice that an AI-supported output confuses elderly patients. A claims officer may see that a fraud detection tool flags certain customer profiles too often. A procurement manager might discover that generative AI produces supplier summaries that sound convincing but leave out crucial disclaimers. These observations are key early-warning signals.[6]

Adaptation also requires accountability to be revisited as practice evolves. When decisions are shaped by both humans and AI, responsibility can blur. If a manager follows an AI recommendation that later proves harmful, who is accountable? Is it the model developer, the vendor, the user, the department head or the organisation? A resilient governance system does not wait for a failure to answer these questions. It clarifies all the necessary rights, escalation routes and documentation standards that need to be considered beforehand, then revises them as new cases expose new ambiguities.

This is the difference between AI governance as compliance and AI governance as organisational learning. Compliance asks whether the approved process was followed, whereas learning asks what the organisation is discovering about the interaction between people, tools

and consequences. In fast-changing environments, that second question is the one that builds resilience.

LEADING RESILIENT AI ADOPTION

Effective adoption of AI begins with approaching AI as change management rather than technology implementation. That shift changes the work leaders must do.

First, leaders should identify the behavioural stakes of AI adoption. A significant rollout of an AI system should come with an account of the expected behavioural changes. Leaders need to clearly communicate these expected changes to employees from the outset.

Second, leaders should embed behavioural risk mapping within the deployment process. Before a system goes live, the organisation should examine where distrust, over-trust, anxiety, workarounds or accountability gaps are likely to arise. This should be tailored to the specific technology in question—a tool for drafting marketing copy, for example, creates very different behavioural risks from a tool for performance evaluation or credit scoring. Mapping these risks further strengthens leaders' communications, as they can shape expectations around likely scenarios and concerns before they emerge.

Third, user involvement should happen earlier than it often does. Too many employees are invited to test systems only after key design choices have been made. Genuine involvement means understanding how workflows could change before final design changes have been made. Involving employees at the design stage allows them to meaningfully participate in the change initiative while providing direct feedback from end-users. Their involvement is thus both symbolic (as employees feel heard) and functional.

Lastly, governance must stay close to practice. Committees, audits and policy documents are useful only if they remain connected to what people are doing on the ground. Leaders should regularly ask where the system is being bypassed, where it is being followed and where it is creating new pressures. The answers may be uncomfortable. They are also the raw material for resilience.

FROM ROLLOUT TO RESILIENCE

The promise of AI is real. It can help organisations respond to volatility, expand access, improve decisions and operate at a scale that would otherwise be impossible.[7] Yet, poorly managed AI can also make organisations brittle. It can centralise decisions without clarifying accountability, accelerate work without preserving judgement or create an appearance of objectivity while hiding highly contested assumptions. In short, it can make organisations faster, but less trusted and stable.

The organisations that thrive with AI will be those that understand the paradox at the heart of intelligent technology: the more powerful AI becomes, the more important human behaviour becomes. Leaders must design not only for what machines can do—and the efficiency they bring—but for how people will respond to them.

Resilient AI starts with anticipation, accounting for the human meaning of a system before it is introduced. It relies on preparation, where leaders rehearse judgement rather than simply train usage. And it requires adaptation, as organisations treat real-world use as evidence for how governance must evolve.

In uncertain times, organisations often look for resilience in stronger systems, better forecasts and faster tools. These matter. But the most resilient AI systems may ultimately be those designed not around perfect machines, but around perfectly irrational and deeply human users. AMI

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Learning Objectives

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- Analyse financial impacts of climate change using structured risk assessment methodologies and evaluate importance and requirements of climate risk disclosure within sustainability and ESG reporting
- Leverage data analytics and emerging technologies to enhance climate risk assessments and resilience planning and examine case studies to understand best practices at organisational and municipal levels

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- Apply AI to real-world challenges through practical applications such as energy efficiency and waste management optimisation
- Align skills with Singapore's Green Initiatives and contribute to national sustainability goals under the Singapore Green Plan 2030