



DECEMBER 2025

COUNCIL on BUSINESS & SOCIETY

GLOBAL VOICE **MAGAZINE**



IN THE SEASON OF IMMORTAL HOPE

On Age and
Resilience
at Work

The Paradoxes
of Workplace
Justice in DEI

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Adaptation: From
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/EDITORIAL

DICKENS COUNTERATTACKS

Evoking Charles Dickens for Christmas is a cliché. How many times have we heard *A Christmas Carol*, the story of Ebenezer Scrooge, the cold, calculative old man who was literally haunted by his ghosts, and who, on the eve of Christmas, was inspired to change his life for good. This story has moved and inspired millions of people of all ages, all over the world. It has been represented in cinema, in children's literature, and it even inspired the creation of the Scrooge McDuck character (yes, the uncle of Donald Duck!).

However, there is another Christmas piece by Dickens. Far less known, but possibly much more insightful. In any case, much more relevant for us today. *What Christmas Is As We Grow Older*, was written in 1851, only eight years after his famous *A Christmas Carol*, and it shows a completely different perspective.

Dickens was now a different person. He was a widely successful writer. But that year of 1851 had been his *annus horribilis*. He had recently lost several members of his family, including his beloved young daughter Dora. Dickens, as a more mature person, saw those past, happy Christmases with nostalgia, as he remembered cheerful moments with all his family. At some point, he even doubted that such happiness could ever have happened, and he asked himself whether "life is little better than a dream?"

At that point, Dickens reacted with a rallying cry: *No! Christmas is not for children only*. He still considered the Christmas spirit to be one of "active usefulness, perseverance, cheerful discharge of duty, kindness and forbearance". Particularly forbearance. Indeed hope.

It was precisely on Christmas Day, when Dickens vividly remembered his lost ones that he declared: "in the season of immortal hope, and on the birthday of immortal mercy, we will shut out Nothing!" In sum, Dickens reminds us that nothing is lost, and that despite all the hardship that inevitably happens in life, one has to remain confident, resilient, and strong.

While written almost two centuries ago, this short story from Charles Dickens seems so contemporary, so timely, and so appropriate for these times of doubt and hesitation. In a similar vein, we strive in this Global Voice 34 to share a positive message, with the best contributions and enlightenment from our member schools.

Our gratitude to Charles John Dickens.
Merry Christmas!



Professor Adrian Zicari,
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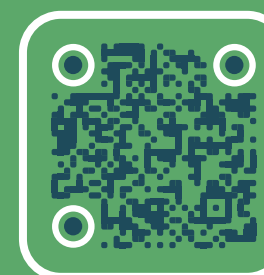
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ON AGE AND RESILIENCE AT WORK

“

Resilience is never a static state, but a dynamic process involving a combination of personal history and institutional architecture.



An international group of researchers that includes Prof. **Jean-Luc Cerdin, ESSEC Business School**, explore the critical subject of career resilience in the context of a global aging workforce to debunk the stereotypes from an individual and country-specific perspective.

Related research: Age and Career Resilience Through the Lens of Life Course Theory: Examining Individual Mechanisms and Macro-Level Context Across 28 Countries, Bernadeta Goštautaitė et al, Human Resource management Journal, 08 April 2025,

The world of work no longer offers respite: digital transitions, economic uncertainty, an ageing workforce. In this unstable landscape, career resilience is essential for professional survival. It refers to the ability to absorb shocks, bounce back and stay on track despite crises. One question remains, recurring and persistent: does age really weaken this resilience, as certain clichés would have us believe, or does it, on the contrary, provide deeper resources to cope with the turbulence of contemporary work?

Research to date has been contradictory: a decline in flexibility for some, emotional superiority and endurance for others. To break this deadlock, an international team conducted a large-scale study, analysing the responses of 6,772 employees and managers across 28 countries. Their objective was to understand the relationship between age and career resilience based on life course theory, which views individual trajectories as the product of personal characteristics, accumulated experiences and socio-economic contexts.

Their conclusion is clear: age does not affect resilience in a simple or uniform way. It simultaneously activates two opposing mechanisms, one that erodes strength and another that reinforces it, and it is the way in which each country modulates this balance that makes the difference.

THE NARROW PATH OF AGE

The first of these mechanisms is negative: with age, career optimism tends to decline. Individuals advance along a path where opportunities for advancement seem to become scarcer, where promotions become more exceptional and where signs of employability appear less favourable. Added to this are various forms of discrimination, implicit or explicit, which affect confidence in the future of one's career.

This dynamic is by no means anecdotal. Optimism is one of the drivers of resilience, as it fuels commitment, encourages initiative and enables people to get through difficult periods with a constructive outlook. A decline in optimism therefore tends to weaken resilience, not through a lack of skills, but through a less positive outlook on the future. This first mechanism does not manifest itself with the same intensity everywhere. The researchers show that it is greatly amplified in countries with high unemployment.

In these contexts, older workers feel particularly vulnerable, anticipate greater difficulty in finding a new job in the event of redundancy, and develop a pessimistic view of their prospects for mobility or retraining. National unemployment thus acts as a psychological multiplier: it reinforces the fear of professional obsolescence and intensifies the decline in optimism associated with advancing age. Conversely, in more favourable economic environments, this effect is mitigated and does not produce the same consequences.

RESILIENCE: PURPOSE IS THE WAY FORWARD

In the face of this negative dynamic, a positive mechanism unfolds in parallel: with age, people tend to develop a stronger sense of career purpose. Individuals accumulate experience, gradually clarify their values and adjust their professional choices to align them with what makes sense to them. They develop a better understanding of their contribution to the collective, perceive the usefulness of their work more clearly and find it easier to identify the environments in which they thrive.

This strengthening of meaning is a valuable resource for resilience: it gives coherence to career paths, stabilises deep motivations and makes it easier to cope with transitions, setbacks or restructuring. This positive dynamic also depends on the national context. Researchers observe that it is significantly amplified in countries with a strong educational culture, i.e. in societies that value lifelong learning, invest heavily in education and have a high level of trust in educational institutions. In these countries, individuals age in an environment that encourages skills updating, the possibility of reinventing oneself and the continuous pursuit of meaningful goals.

Career meaning is therefore more robust, and its effect on resilience is significantly enhanced. Conversely, in contexts where training is less accessible or less valued, opportunities for professional renewal are more limited, which weakens the positive dynamics associated with age. The great strength of the study is that it integrates these two mechanisms into a coherent model.

Age is neither an advantage nor a handicap in itself. Rather, it is a balancing factor between a resource that is diminishing and a resource that is increasing. The decline in optimism and the strengthening of meaning are two simultaneous, contradictory but equally real trajectories. An individual's resilience at a given age is therefore the result of the combination of these two forces.

What varies from one country to another is not the effect of age itself, but the way in which institutions, cultural norms, public policies and economic conditions modulate this balance. The implications of these findings are numerous.

OUTCOMES FOR SHAPING CAREER PATHS AND HR POLICY

For individuals, understanding this dual movement allows them to better focus their efforts. An experienced worker is not doomed to declining resilience: by consolidating the elements that nourish meaning, undertaking training, surrounding themselves with supportive networks and cultivating a learning mindset, they can compensate for declining optimism and maintain high resilience.

For organisations, the study clearly shows that an age-sensitive HR policy is not only useful but necessary. Investing in the professional development of older employees, combating age bias in training and internal mobility, encouraging job crafting and creating meaningful work environments are concrete levers for strengthening collective resilience. Companies that ignore these dynamics risk losing human capital at a time when experience is becoming a strategic advantage.

Finally, for public authorities, the results confirm the decisive role of employment and education policies. Combating senior unemployment and investing in lifelong learning are not just economic or social issues: they are also levers of national resilience. Countries that combine low unemployment with a strong educational culture create the conditions for a workforce capable of bouncing back from crises, regardless of age or changes in the labour market. The study thus offers a nuanced and deeply insightful interpretation of the link between age and resilience.

It reminds us that resilience is never a static state, but a dynamic process involving a combination of personal history and institutional architecture. In a world where careers are becoming longer and more fragmented, this integrated understanding is becoming an indispensable tool for rethinking career paths, HR policies and public policies. **///**

KEY TAKEAWAYS

- Age does not uniformly weaken resilience — it activates two opposing forces: declining optimism and increasing career meaning.
- Career optimism tends to erode with age, especially in high-unemployment countries where older workers feel more vulnerable and anticipate fewer opportunities.
- This loss of optimism reduces resilience, not due to weaker skills, but because a dimmer outlook diminishes initiative, engagement, and confidence.
- At the same time, age strengthens career purpose: experience clarifies values, boosts self-knowledge, and reinforces a sense of contribution — a key source of resilience.
- National context shapes the balance: strong educational cultures amplify the positive effects of age, while weak training ecosystems limit reinvention and reduce resilience.
- Implications span individuals, organisations, and governments: resilience depends on lifelong learning, age-inclusive HR policies, and labour markets that support mobility and continued development.



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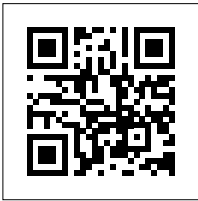


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AUTHENTIC PURPOSE IN BANKING: THE ULTIMATE STRATEGIC ADVANTAGE



Since higher purpose transcends conventional thinking, pursuing it can be particularly challenging in organizations where control and compliance are paramount.



Profs. **Anjan V. Thakor, WashU Olin Business School**, and **Robert E. Quinn, Michigan Ross School of Business**, draw on their research into the Bank of Bird-in-Hand in the United States to highlight how even a highly regulated institution can embrace authentic purpose and integrate it into its business model.

Related research: Ethics, Culture, and Higher Purpose in Banking: Post-Crisis Governance Developments, International Journal of Central Banking, December 2021.

Many Fortune 500 companies have an explicitly stated mission statement, but few have an authentic statement of higher purpose – one that transcends the typical pursuit of profit and prevents the emergence of a transactional culture where self-interest drives the culture. An authentic statement of higher purpose clarifies the organization's mission and attracts people to commit to the common good. It serves as the guiding principle for every decision, breaking down silos and fostering a culture of unified, creative effort.

The key is authenticity. As we pointed out in our 2018 Harvard Business Review article, most attempts to create purpose-driven organizations fail because many executives cannot imagine themselves, or others, moving beyond a conventional, self-interested mindset to genuinely pursue the common good. Most “know” it is impossible. As one CEO candidly told us, “I do not want to create a statement of purpose, because I know we will not live it.” Unfortunately, hypocrisy is often assumed in professional life. We live in pretense, perpetuate it, and ultimately reap its consequences.

People work for many reasons, one of which is to make money. While money may bring a person's body to work, it seldom brings their soul. In high-performing organizations, people feel a deep sense of meaning and passion for their work. These organizations typically have a higher purpose – not a PR statement or a productivity tactic, but a collective call to contribute to something greater. This purpose is a moral statement that everyone believes in and endorses, creating accountability that comes from within, not imposed from outside.

Since higher purpose transcends conventional thinking, pursuing it can be particularly challenging in organizations where control and compliance are paramount, such as highly regulated, deposit-insured banks. Following our 2018 HBR article, we set out to explore whether purpose-driven banks exist, and if so, how they balance business prudence with authentic purpose.

A little over a year ago, we were fortunate to find just such a bank and conduct an in-depth study, including on-site visits and interviews with executives, employees, customers, directors, and investors. The bank, called Bank of Bird-in-Hand, is the first FDIC-insured de novo bank to open in the U.S. after the 2007-09 financial crisis. Our research provided valuable insights into how even a highly regulated institution can embrace authentic purpose and integrate it into its business model. Here, we share some of what we learned.

BACKGROUND

The Bank of Bird-in-Hand was founded in December 2013 with 10 employees, becoming the first bank in the U.S. to gain a charter since 2010. It was established by a group of investors in the rural village of Bird-in-Hand, located in Lancaster County, Pennsylvania – a regional home to a significant Amish community. The bank's purpose was clear from the start: to provide much-needed banking services to the underserved area, particularly to the Amish and Mennonite communities, who had limited access to financial services.

The bank received approval from the Federal Deposit Insurance Corporation (FDIC) on November 27, 2013, and launched with \$17 million in equity capital provided by the initial investors. Although the bank is stockholder-owned, it is not publicly traded.

From its inception, the bank's major investors and Board of Directors made a decisive commitment: they would not "cash out" by selling the bank to profit from their investment. Instead, the transcendent purpose of the bank—to provide financial services to an underbanked community – remained the focus. The bank's first CEO, Brent Peters, stepped down on July 1, 2014, and was succeeded by Lori Maley, who served as acting CEO until November 2014, when Alan Dakey was appointed. After his retirement in March 2017, Ms. Maley was promoted to CEO, a role she holds today.

Since its founding, the bank has experienced impressive growth, with total assets reaching \$1.363 billion, deposits totaling \$1.089 billion, and shareholders' equity amounting to \$141.253 million by the end of 2023. Investors we interviewed expressed high satisfaction with their returns.

While it may sound overly complimentary, it's important to highlight a few remarkable facts about the bank. First, the bank has experienced virtually no loan defaults, a testament not only to its credit risk management but also to the strength of its purpose-driven culture and its deep relationships with borrowers and the local community. Second, the customers we interviewed – including those at the bank's annual customer appreciation picnic – were genuinely enthusiastic about the bank. Third, employee engagement and satisfaction were exceptionally high. One employee, recovering from cancer treatment, was advised to take more time off before returning to work, to which she responded, "Why? The bank is where my sunshine is!" Finally, bank regulators have expressed satisfaction with the bank's operations, indicating that it has successfully balanced regulatory compliance and control with fostering a purpose-driven culture that empowers employees without stifling them.

WHAT DO WE LEARN?

Rather than delving into the specifics of how the Bank of Bird-in-Hand has managed to be both authentically and successfully purpose-driven, we'll highlight the three most important lessons we learned from studying the bank.

Lesson 1. Authentic, higher purpose comes from an external motivation, but the channel through which it is manifest is internal.

The key to the success of Bank of Bird-in-Hand's higher purpose pursuit is the impact its purpose has on the internal motivation of the bank's employees. But alignment is key to having a positive motivational effect, so how do you align all employees with that purpose? What we learned from studying the Bank of Bird-in-Hand is that for an organization to truly live its purpose, employees must believe in it as passionately as the founders and senior leaders do. This may sound straightforward, but in practice, it's a formidable challenge.

To achieve this alignment, several elements must be in place: employees must trust that their leaders genuinely believe in the purpose, so that when profit and purpose seem to conflict, the organization chooses purpose; the pursuit of purpose must inspire pride in employees, offering deep meaning in their work; and the purpose must transparently guide routine decision-making, shaping the organization's culture. At the Bank of Bird-in-Hand, all these elements were present. So, even though the bank was motivated by the "external motivation" of serving an underbanked community, its success was driven by the internal commitment of its employees.





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Lesson 2. Leading a purpose-driven organization is challenging internally because authenticity of purpose conflicts with the transactional belief system

Given the growing evidence – both anecdotal and empirical – that purpose-driven organizations achieve positive economic outcomes, the obvious question is: why isn't everyone following this model? The answer lies in the subtle conflict between purpose-driven leadership and the more common, control-oriented, transactional leadership style that delivers solid economic results for many companies.

In a purpose-driven organization, leaders don't treat employees as mere factors of production, as standard microeconomic theory suggests. Instead, they see them as "creative geniuses" who must be respected and aligned, not controlled. Leaders in these organizations understand that their role is not to manage people, but to help them find their "why" – the deeper purpose that drives their energy and focus.

From there, the organization is built around these values. This requires placing recruitment at the forefront and making decisions that don't threaten the culture. For example, the Bank of Bird-in-Hand has turned down numerous opportunities for rapid growth, always asking one critical question: "Can we do this while maintaining our approach to recruitment and our culture?" Few organizations can consistently operate with such a commitment to alignment.

Lesson 3. Internal challenges in pursuing purpose are magnified by hidden non-believers.

Many organizations have leaders who publicly endorse the organization's higher purpose but secretly don't believe in it and may even engage in undetected sabotage. We've observed this problem in too many organizations, where managers are promoted not because they inspire others but because they excel at complying with directives or ingratiating themselves with higher-ups.

These leaders often find themselves in charge of employees who are more purpose-driven and sharp-witted than they are. Leading such employees is a task these managers often fumble. Worse, they may feel threatened by them. This dynamic can lead to a series of decisions that gradually extinguish the organization's purpose. Fortunately, at the Bank of Bird-in-Hand, the leadership provided by Lori Maley and her team has avoided this pitfall, preserving the organization's purpose and maintaining its authenticity.

Lesson 4: Because bankers cannot believe in higher purpose, higher purpose is the ultimate strategic advantage

Leaders cannot pursue what they cannot imagine. Purpose-driven banking is outside the transactional mindset that dominates global banking. Most readers of this paper will likely dismiss the idea, "knowing" that higher purpose cannot be implemented in modern banking.

In each interview, we asked whether the culture of the bank could be replicated in an area very different from Lancaster

County, Pennsylvania, say South Chicago. Almost everyone doubted it. The two exceptions were Lori Maley and Bill O'Brien, the individuals most responsible for the success of Bank of Bird-in-Hand. Both acknowledged the challenges and the costs involved. They recognized that most people wouldn't be willing to pay that price. Yet, both firmly believed that such a culture could be created in South Chicago – or anywhere else. The key differentiator is being an authentic leader fully committed to the common good of the bank.

Further details can be found in our case study and accompanying video (see Quinn, R., and A. Thakor, "Banking in Paradise: Bank of Bird-in-Hand", WFA center for Finance and Accounting Case Study, August 2024). **///**

KEY TAKEAWAYS

- ❑ **Authentic higher purpose transcends profit seeking.** Most companies have mission statements but lack an authentic higher purpose—one that unites people around a shared commitment to the common good rather than self-interest.
- ❑ **Authenticity is the foundation of purpose.** Many organizations fail at becoming purpose-driven because leaders themselves often doubt that people can act beyond self-interest, leading to cynicism and hypocrisy.
- ❑ **Purpose-driven organizations engage the soul, not just the body.** In high-performing, purpose-driven organizations, employees are motivated by meaning and moral conviction rather than external incentives like money or compliance.
- ❑ **Even highly regulated sectors can live purpose authentically.** The Bank of Bird-in-Hand demonstrates that a tightly controlled industry such as banking can still embrace a higher purpose and integrate it effectively into its business model.
- ❑ **Employee alignment with purpose is essential.** A higher purpose only thrives when employees genuinely believe in it. This requires trust in leadership, pride in the mission, and consistent decisions that prioritize purpose over profit.
- ❑ **Purpose-driven leadership contrasts with transactional leadership.** Instead of controlling employees as economic inputs, purpose-driven leaders treat them as creative, autonomous individuals who must be aligned with the organization's deeper "why."
- ❑ **Hidden non-believers threaten authenticity from within.** Organizations often harbour managers who publicly endorse the purpose but secretly undermine it, eroding morale and culture. Authentic leadership, as seen at Bank of Bird-in-Hand, prevents this decay.
- ❑ **True belief in higher purpose is a competitive advantage.** Because most leaders cannot imagine a purpose-driven banking model, those who do—and authentically commit to it—gain a rare and powerful strategic edge that others cannot easily replicate.

NAVIGATING THE MAZE: THE INHERENT PARADOXES OF WORKPLACE JUSTICE IN DEI



Implementing DEI isn't like following a recipe. It's more like being a judge, constantly weighing competing claims.



Prof. **Anita Bosch** at **Stellenbosch Business School** explores the hidden paradoxes of diversity, equality, and inclusion. As fairness, merit, and need collide, and as organisations wrestle with scarce resources, clashing values, and shifting timelines, good intentions can quickly unravel. The fix? Embracing paradoxical thinking and treating complexity not as a barrier but as the path to more authentic DEI.

Related research: Organizational and social justice paradoxes in EDI, Anita Bosch, 2024, *Frontiers in Psychology*, <https://doi.org/10.3389/fpsyg.2024.1320993>

The terms diversity, equality, and inclusion (DEI) are now commonly used in business. Billions are invested in policies and training aimed at creating fairer workplaces. It is frequently regarded as the morally correct thing to do, an indication of progressive leadership, and a means of demonstrating that a business genuinely supports justice. Yet those who have tried to put DEI into practice know it is anything but simple. On the ground, it often feels far more complicated than the motivational slogans suggest – messy, full of tensions, and riddled with contradictions.

Prof. Anita Bosch of Stellenbosch Business School cautions against treating DEI as a box-ticking exercise or a neat standard of fairness. In her view, workplace justice is often contradictory and intrinsically complicated. Rather than depending on short-term solutions or memorable campaigns, she challenges executives to face a more difficult truth: justice at work is rarely straightforward. It unfolds in layers, is constantly contested, and sometimes produces contradictions rather than clarity.



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THE THREE PILLARS OF JUSTICE AND WHY THEY CRACK UNDER PRESSURE

According to Bosch, workplace justice traditionally rests on three pillars:

- 1. Distributive** – Are rewards and resources fair?
 - 2. Procedural** – Are decisions made in a fair way?
 - 3. Interactional** – Are people treated with respect and dignity?
- But when organisations try to achieve social justice goals like DEI, these pillars face an extra challenge. Leaders must juggle three often-competing principles:

1. Merit

We all agree people should be rewarded for hard work but there's a catch. Bosch points out that our idea of "merit" is often shaped by old rules that favoured certain types of people. If we only reward past achievements, we risk reinforcing historical privilege. True social justice also means looking at future potential, investing in people from marginalized groups who haven't had the same chances to prove themselves. The tension? Rewarding achievement versus correcting historical wrongs.

2. Equality

Everyone wants equality, but Bosch is clear: equality isn't about everyone being treated the same. It's about understanding the difference between:

- **Equality of opportunity** – everyone starts at the same line.
 - **Equality of outcome** – everyone finishes at the same time.
- A truly fair workplace often leans toward **equity** giving different supports to account for different starting points. To someone who's always had a head start, this can feel like special treatment.

3. Need

Should a company provide a lactation room, software for a blind employee, or a living wage because it's the right thing to do or just because it's generous? Bosch explains this distinction is critical. When needs are met as charity, it creates a power imbalance. When they are recognised as a right, it builds dignity. But in tough economic times, it's easy to get stuck wondering what's affordable versus what's morally required.

In short, even the strongest pillars of justice can wobble under pressure. Leaders must navigate these tensions carefully, balancing merit, equality, and need while keeping the humanity of their employees at the centre.

WHY THIS ISN'T JUST AN HR PROBLEM

When these paradoxes are ignored, DEI initiatives don't just fail quietly – they can backfire spectacularly. They breed resentment, fuel perceptions of reverse discrimination, and erode trust in leadership. Employees aren't fooled by rhetoric that doesn't match reality.

For managers and executives, Bosch's work is a wake-up call. It shows that implementing DEI isn't like following a recipe. It's more like being a judge, constantly weighing competing claims. Do we prioritize the immediate merit of our current team or the potential of a more diverse pipeline? Do we aim for equal treatment or equitable support? There are no easy answers, and pretending otherwise is a recipe for failure.

THE FOUR PARADOXES EVERY LEADER MUST FACE

Bosch crystallizes these tensions into four unavoidable paradoxes that define the modern leader's dilemma:

- 1. The Paradox of Need:** Is fulfilling an employee's need a core obligation of justice, or an act of charitable generosity? The answer changes based on the company's financial health, placing a moral burden on leaders that goes far beyond the balance sheet.
- 2. The Paradox of Social Value:** DEI assumes everyone agrees on what's "right." But values are deeply cultural and contested. What looks like progressive inclusion in one context can be seen as imposing foreign values in another.
- 3. The Paradox of the Productive Economy:** Inclusion works when the pie is growing. In economies with high unemployment and scarce jobs, hiring from marginalized groups can feel like a painful game of musical chairs simply replacing one group with another. This turns DEI into a source of conflict rather than solidarity.
- 4. The Paradox of Time:** Workplace justice demands short-term results keeping the peace and boosting productivity now. Social justice is a long-term project of rebuilding broken systems. Leaders are caught between the immediate pressure to perform and the long-term duty to repair.

FACING COMPLEXITY HEAD-ON

Prof. Bosch suggests that organisations need to embrace paradox rather than avoid it. This means being open about trade-offs, explaining decisions clearly, and preparing managers to live with competing demands. Tools such as case studies, scenario planning and leadership training can help leaders deal with contradictions honestly instead of brushing them aside.

At its best, DEI reshapes workplaces into places where fairness and inclusion feel real. But that requires courage from leaders to admit that justice is messy, contested, and constantly shifting. Those who face that reality with openness are far more likely to create DEI programmes that last. ///

KEY TAKEAWAYS

- ❑ DEI may seem straightforward, but in practice it is full of contradictions that make progress more complex than expected.
- ❑ Fairness, merit and need rarely align perfectly, and leaders are often forced to balance them carefully in their decisions.
- ❑ Everyday challenges are shaped by four major paradoxes: managing needs with limited resources, translating social values into workplace realities, balancing inclusion with economic scarcity, and reconciling short-term expectations with long-term change.
- ❑ Oversimplified slogans and quick fixes can easily backfire, leaving employees doubtful about the organisation's true intentions.
- ❑ Openly acknowledging trade-offs and explaining choices helps leaders build trust and credibility, even when outcomes are imperfect.
- ❑ The real test of leadership is not in eliminating paradoxes, but in navigating them with honesty, care, and consistency.

HOW A BUDDHIST ENGINEER BUILT JAPAN'S MOST ETHICAL MANAGEMENT SYSTEM



“

Inamori's decisions were remarkable because they combined mathematical rigour with ethical clarity – a rare balance in modern capitalism.



Prof. **Keikoh Ryu**, **Keio Business School**, joins the **Routledge-CoBS Focus on Responsible Business** series with his soon-to-be published book **Strategic Altruism: Total Strategy Inspired by Kazuo**

Inamori's Management Philosophy. Who is the Japanese legendary figure behind the title and why is his management and leadership approach so important as a model for others? Prof. **Adrian Zicari**, **ESSEC Business School-CoBS** interviews Prof. Ryu to find out.

Adrian Zicari: In a few words, who was Kazuo Inamori?

Keikoh Ryu: **Kazuo Inamori** (1932–2022) was a Japanese entrepreneur, philanthropist, and Zen Buddhist priest who founded Kyocera Corporation in 1959 and DDI (later KDDI) in 2000—both now pillars of Japan's industrial and telecom sectors. He was also the outsider who led Japan Airlines (JAL) out of bankruptcy at the age of 77, and the founder of the **Inamori Foundation** and the Kyoto Prize. More than a businessman, he was a moral innovator who proved that ethics and profitability can co-exist when guided by “strategic altruism.” **Adrian Zicari:** Why does Kazuo Inamori's life deserve to be known beyond Japan?

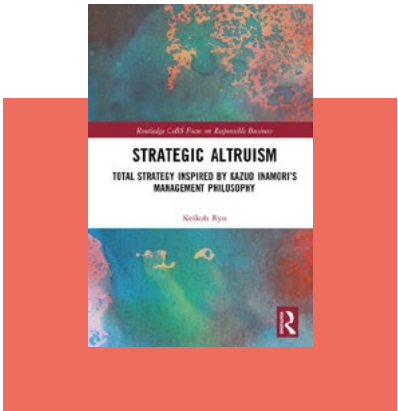
Keikoh Ryu: Because his ideas travel. Inamori's career spanned materials, electronics, telecommunications, and aviation – all of which he reshaped through principled management. At Kyocera, he turned a small ceramics startup into a global electronics supplier that pioneered fine-ceramic technology. Four decades later, he helped engineer the three-way merger that created KDDI, now Japan's second-largest telecom operator. And in 2010, after JAL collapsed with massive debts, he accepted a



government appeal to become chairman—despite having no airline experience. Within a year, JAL reported a ¥188.4 billion operating profit, and by 2012 it was listed on the Tokyo Stock Exchange in one of the year's largest IPOs.

These turnarounds show that Inamori's approach was not bound by industry or culture. He codified a management system – Amoeba Management – and a moral framework – Strategic Altruism – that any organization can adapt. His life deserves global attention because it offers a coherent model for aligning financial performance with public good – a challenge that business leaders everywhere still grapple with.

Adrian Zicari: In which sense were his business decisions exemplary, different, or remarkable? Could you provide some examples?



Keikoh Ryu: Inamori refused to manage through slogans or morale posters – he built rules that bite. His **Amoeba Management** system breaks a large company into small, autonomous profit centres – “amoebas” – each responsible for its own P&L. Internal transactions are priced at external market rates to eliminate political gaming and cross-subsidies. Performance is measured by a single, universal metric: value-added per hour, which trains financial discipline where it matters most – at the front line.

Equally notable was his understanding of human behaviour. Knowing that metrics can be gamed, he decoupled performance scores from compensation – reducing perverse incentives and focusing employees on true productivity rather than KPI theatre. This design has been replicated by firms in Asia and Europe alike as a scalable model of **“distributed leadership.”**

When he took over Japan Airlines, he applied the same discipline in a bureaucratic, loss-making environment. He introduced a plain-language **JAL Philosophy**, revamped accountability systems, cut unprofitable routes and waste, and brought transparency to management. Within twelve months, the numbers spoke for themselves: record profits, a clean balance sheet, and a culture rebuilt around responsibility and service. He took no salary during the turnaround – leading by example to restore trust and moral authority.

Inamori's decisions were remarkable because they combined mathematical rigour with ethical clarity – a rare balance in modern capitalism.

Adrian Zicari: Besides his business achievements, Mr. Inamori was deeply religious (he was a Zen priest). How did this aspect shape his business practice?

Keikoh Ryu: Inamori was ordained as a Zen Buddhist priest in 1997 at **Enpuku-ji Temple** – taking the monastic name Daiwa – but he never used religion as corporate decoration – he lived it. At the heart of his practice was a single question he asked before every decision: “Is my motive truly good?” This disarming question was the ethical engine of his entire system. He believed that people are not merely rational actors but moral agents capable of cultivating a “higher ego” (altruistic conscience) over a “lower ego” (selfish desire). His management methods therefore reinforced self-discipline, transparency, and service – virtues that turn morality into organizational energy.

He called this integration “Strategic Altruism.” In practice, it meant that ethical principles were not a public-relations gesture but the operating code of the enterprise. Profit was a result, not a goal; value was measured in both economic and social terms. Decades before **ESG** or **stakeholder capitalism** entered the mainstream, Inamori had already demonstrated that doing good can be a competitive advantage when designed into the system itself.

Beyond his corporate roles, he founded the Inamori Foundation in 1984 to promote the harmony of science and humanity, establishing the internationally renowned **Kyoto Prize**. Through his leadership academy, **Seiwa Juku**, he mentored thousands of business leaders around the world – teaching that management is ultimately a spiritual discipline – a path for polishing one's character.

His life embodied a principle that remains universal: “Good motives create good management, and good management creates good society.”



A SPOTLIGHT ON KAZUO INAMORI

Kazuo Inamori – The Business Monk Who Practiced “Strategic Altruism”: How a Buddhist engineer built Japan’s most ethical management system

A comprehensive overview of Kazuo Inamori, presenting his life, management philosophy, practical implementation, and lessons for today.

Note: This text may contain AI-assisted content.

1. Life Overview

- Kazuo Inamori was born in **1932** in Kagoshima Prefecture, Japan.
- In **1955**, he graduated from the Department of Applied Chemistry at Kagoshima University.
- He initially worked in ceramic materials research.
- In **1959**, he founded **Kyocera Corporation**, starting with ceramic components and gradually expanding into electronics and materials.
- In **1984**, he founded **DDI Corporation** (now part of KDDI), entering the telecommunications sector.
- In **2010**, he was invited by the Japanese government to serve as **chairman of Japan Airlines (JAL)**, helping the company recover from bankruptcy.
- Later in life, he became a Buddhist monk and passed away on August **24, 2022**.

2. Core Management Philosophy: Integrating Altruism and Profit

Kazuo Inamori’s management philosophy centres on combining altruistic mindset with business objectives.

Altruism as the foundation

- He emphasized that humans have a mission higher than personal gain: to serve humanity and society.
- His foundation, the **Inamori Foundation**, is dedicated to the happiness of humanity and society.
- Altruism is the base of his philosophy: “Do the right thing, prioritize humanity.”

Altruism and profit are not opposed

- Traditional views see profit pursuit and serving society as contradictory. Inamori argued they can coexist, creating a positive cycle where altruism leads to long-term profit.
- He emphasized balancing “maximize revenue, minimize cost” with “spiritual and material well-being.”

Systematized practice: Amoeba Management

- Inamori’s Amoeba Management System divides large organizations into small, autonomous units (“amoebas”), each responsible for its own profit and decision-making.
- This system ensures full employee participation and transparent accountability.

Cultivating mindset and organizational culture

- He stressed integrating mind, knowledge, and action (心・智・行).
- In his companies, he held open discussions (“kompa”) for managers and employees to share their life and work philosophies on an equal footing.
- He frequently emphasized the idea of **self-cultivation, family harmony, business management, and contributing to the world**, blending Buddhist and Zen thought into corporate practice.

3. Practical Implementation and Case Studies

- At **Kyocera**, he applied the principle of “**Respect the heavens, love people**”, meaning reverence for natural laws and respect for human dignity.
- During the **JAL restructuring**, he focused not only on financial recovery but also on **employee mindset transformation** and fostering a company-wide sense of social responsibility.
- In his writings, he frequently stated: “**Enhance your mind to enhance management**” — linking personal and spiritual growth to business success.
- His books are very popular in **China**, with over 25 million copies sold outside Japan.

4. Insights from Strategic Altruism

From Inamori’s philosophy, we can draw the following lessons:

- **Do not focus solely on short-term gains:** Prioritizing employee, societal, and environmental well-being ensures sustainable success.
- **Institutionalize altruism:** Make the idea of serving others a structured part of decision-making and organization.
- **Empower small teams with transparency:** The amoeba model allows each unit to take responsibility and implement altruistic principles at the grassroots level.
- **Corporate culture and employee mindset are key assets:** Long-term health depends on employees embracing a purpose beyond profit.
- **Balance spiritual and technical development:** Management is not only technical but also ethical and personal; integrating moral cultivation strengthens business resilience. **///**



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FIGHTING CORRUPTION IN BRAZIL: THE AUTHORITATIVE BOOK ON THE OPERATION CAR WASH INVESTIGATION



Justice, integrity and ethics are sustained not only through the formal existence of laws, but through the strength of institutions that uphold them.



An interview with Professor and Managing Director of FGVethics at **FGV EAESP Ligia Maura Costa** on the publication of her latest book **"Brazil's Biggest Corruption Scandal: Testimonies from Operation Car Wash"**.

Tom Gamble, Council on Business & Society: In a nutshell, what is the book about?

Ligia Costa: The book provides a distinctive and thorough account of Operation Car Wash, the most extensive and influential anti-corruption investigation in Brazil's history.

It brings together testimonies from key participants in the case, including prosecutors, judges, defense lawyers, and business leaders, offering a multifaceted understanding of how the operation unfolded and transformed Brazil's systems of governance and justice. Through these diverse perspectives, the book examines the intricate interplay between law, politics, ethics, integrity, and corporate governance.

OPERATION CAR WASH: A TURNING POINT IN BRAZIL'S HISTORY

TG: What made you want to write about this particular corruption scandal?

Ligia Costa: As a scholar dedicated to governance, integrity, and compliance, I was drawn to the profound institutional and societal impact of Operation Car Wash. It marked a turning point in Brazil's history, bringing issues of corruption, corporate accountability, and judicial independence to the centre of public debate. Operation Car Wash stood out as the largest and most far-reaching anti-corruption investigation in Brazil's history. It was also the only one that succeeded in holding powerful political and business figures accountable,

effectively dismantling the long-standing perception that imprisonment in Brazil was reserved only for the poor. This unprecedented outcome reshaped public expectations of justice and integrity, revealing that no one should be above the law.

Based on that, I felt it was essential to document these events through the words of those who lived them, to ensure an informed and balanced understanding beyond media narratives or political interpretations.



As a scholar devoted to governance, integrity, and compliance, I was profoundly compelled by the far-reaching institutional and societal consequences of Operation Car Wash. The investigation represented not merely a judicial milestone but a defining moment in Brazil's democratic evolution, as it brought issues of corruption, corporate governance, accountability, and judicial independence to the very center of national and international debate.

Its repercussions extended far beyond the courtroom, challenging long-standing power structures, reshaping public expectations of transparency, and testing the resilience of Brazil's institutions.

BRAZIL'S BIGGEST CORRUPTION SCANDAL: AND A BOOK THAT DEMANDED CARE / DEXTERITY

TG: What challenges did you face when writing the book, perhaps especially when attempting to obtain testimonies?

Ligia Costa: The primary challenge was to build genuine trust among participants while ensuring that the project maintained both academic rigor and absolute neutrality. Many of those interviewed occupied key institutional or political roles and had been directly involved in events that remained controversial in

Brazilian society. Establishing an environment in which they felt safe to share their experiences and perspectives required careful preparation, transparent communication, and a strong commitment to ethical research practices.

The interviews often addressed highly sensitive subjects such as legal proceedings, political pressures, and personal experiences that carried deep emotional and professional implications. Safeguarding confidentiality and protecting the integrity of each testimony were therefore paramount. Every stage of the process, from initial contact to publication, demanded meticulous attention to research ethics and respect for the participants' trust.

An additional challenge involved managing the complexity of translating the testimonies from Portuguese into English without losing their nuance, emotional resonance, or legal precision. Many statements contained technical language and culturally specific references that required thoughtful interpretation rather than literal translation. Preserving the authenticity of each voice while ensuring clarity and coherence for an international readership was one of the most demanding yet rewarding aspects of the work.

TESTIMONIES FROM OPERATION CAR WASH: LESSONS THAT GO BEYOND BRAZIL

TG: Why is this book important for practitioners, companies, and governments?

Ligia Costa: The book serves both as a case study and as a cautionary tale. For practitioners, executives, and corporations, it underscores how fragile governance structures, weak compliance frameworks, and the absence of an ethical culture can irreparably damage reputations, erode stakeholder trust, and destabilize entire economies.

The lessons drawn from Operation Car Wash extend beyond Brazil's borders, offering a global perspective on the consequences of neglecting integrity, transparency, and accountability in the pursuit of political or financial advantage.

For governments and public institutions, the case demonstrates the fundamental importance of institutional independence, transparency, and the consistent application of the rule of law. It highlights how the sustainability of anti-corruption efforts depends on strong democratic institutions, effective checks and balances, and the active engagement of civil society and the media.

Ultimately, the book seeks to inspire reflection on how anti-corruption initiatives can be transformed from temporary responses into lasting frameworks for ethical governance. It argues that genuine progress requires the integration of justice, fairness, and institutional resilience, ensuring that the pursuit of integrity strengthens democracy rather than becoming politicized or short-lived.



TG: What lessons can governments and corporations around the world draw/learn from this case?

Ligia Costa: The central lesson is that meaningful anti-corruption efforts must extend well beyond the realm of punishment. Their ultimate purpose is to preserve institutional independence and ensure that accountability mechanisms are applied consistently and impartially. In Brazil, recent decisions by the Supreme Court to release convicted individuals and annul corruption evidence that had been lawfully obtained have once again revealed the fragility of institutional reforms when justice becomes vulnerable to political pressures.

Sustainable progress in combating corruption depends on integrity systems that are resilient, nonpartisan, and firmly grounded in the rule of law. Governments must uphold judicial independence, protect prosecutorial autonomy, and foster an environment where investigative journalism can operate freely and responsibly.

Corporations, in turn, must embed integrity, ethics and compliance into the core of their governance frameworks, not as formal obligations but as enduring values that shape corporate culture, promote transparency, and strengthen public trust.

TG: On a practitioner and academic level, progress in ethics & compliance has moved in leaps and bounds over the past 20 years. Yet, companies and governments still occasionally step over the line – why is that? What pressures actually urge the latter towards misconduct? Is it “naturally human” to do so, or are there specific contexts, characteristics or factors that encourage misconduct?

Ligia Costa: Misconduct often results from a convergence of pressure, rationalization, opportunity, and impunity. In many institutional, corporate, and political environments, the tolerance of unethical practices and the lack of effective accountability mechanisms create a permissive culture in which misconduct is not only possible but frequently rewarded. When individuals perceive that unethical behavior will go unpunished or that integrity carries personal or professional costs, impunity becomes self-reinforcing, eroding public trust and weakening the legitimacy of institutions.

Short-term performance goals, political incentives, and complacency toward so-called minor infractions provide fertile ground for corruption to flourish. Over time, such behavior becomes normalized, distorting organizational culture and diminishing the moral authority of leadership. The persistence of impunity transforms misconduct from an exception into a systemic feature, undermining both ethical norms and institutional resilience.



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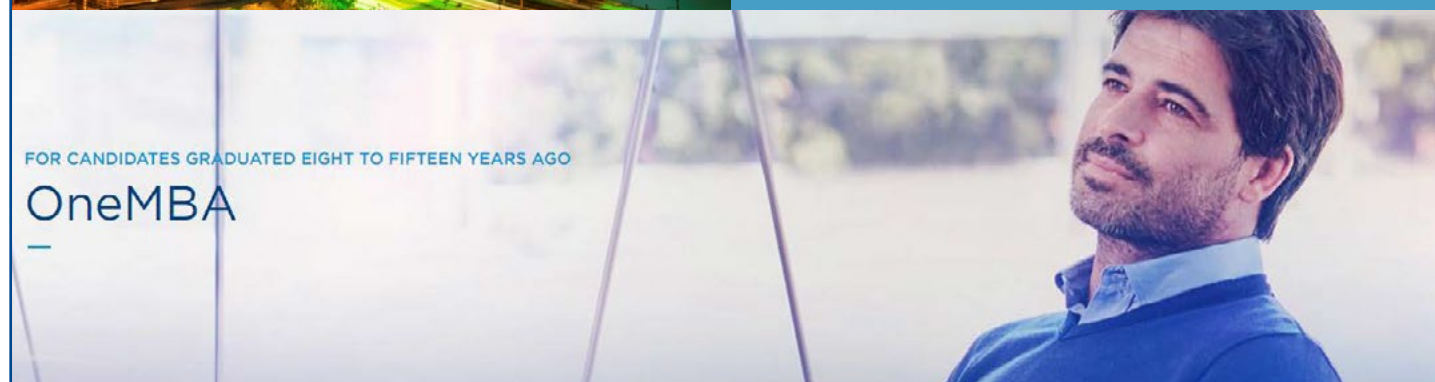
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While self-interest is intrinsic to human behavior, it is the design of institutions and the moral example set by leaders that determine whether that self-interest is directed toward innovation and progress or toward corruption and abuse. Effective governance, therefore, requires the deliberate cultivation of ethical resilience through robust accountability systems, a culture of transparency, and continuous education. Only by confronting impunity and embedding integrity and ethics at every level of decision-making process can societies and organizations ensure that integrity is not situational but structural.

“WHEN ETHICAL CONDUCT BECOMES A SHARED ASPIRATION...” – LIGIA MAURA COSTA

TG: What do you believe can be done to ensure justice, ethical behaviour and compliance?

Ligia Costa: Justice, integrity and ethics are sustained not only through the formal existence of laws, but through the strength of institutions that uphold them, particularly the judiciary, as well as through the education that shapes collective consciousness, and the depth of a society's collective commitment to fairness and accountability.

Laws alone cannot guarantee justice. It is the strength of the institutions that enforce them, the independence of the judiciary that interprets them, the quality of education that informs them, and the civic culture that sustains them that determine whether ethical principles are truly lived or merely proclaimed. When institutions fail to act, or when impunity and inequality distort the application of justice, the moral foundations of a society begin to erode.

Strengthening integrity systems therefore requires more than isolated reforms. It depends on sustained collaboration among governments, the private sector, academia, and civil society, each playing a complementary role in fostering transparency, accountability, and civic awareness.

Public institutions must guarantee access to information and impartial enforcement; corporations must embed ethics and compliance at the core of their governance; universities must educate future leaders to think critically about responsibility and justice; and civil society must hold power to account and encourage participation in democratic oversight.

Transparency, access to reliable information, and credible enforcement mechanisms are indispensable elements of this architecture. Yet the most profound transformation occurs when integrity is no longer perceived as an external imposition, but as a source of legitimacy, trust, and long-term value.

When ethical conduct becomes a shared aspiration rather than a regulatory obligation, it strengthens the social fabric, enhances institutional credibility, and creates conditions in which justice, integrity and good governance can endure across generations. ///

KEY TAKEAWAYS

- ❑ Operation Car Wash marked a turning point in Brazil's history, breaking the perception that justice served only the poor and showing that even powerful political and business figures could be held accountable. It shifted public expectations toward greater transparency and integrity.
- ❑ Writing the book required building trust with highly sensitive and controversial sources. Costa emphasises the importance of academic neutrality, confidentiality, and ethical research practices—particularly when dealing with politically charged and emotionally complex testimonies.
- ❑ Translating testimonies from Portuguese to English demanded precision and cultural sensitivity. Costa sought to maintain each speaker's emotional tone and legal nuance while ensuring clarity for an international audience.
- ❑ Beyond Brazil, the book highlights the global dangers of weak governance, inadequate compliance, and poor ethical culture. It shows how corruption can erode trust, destabilize economies, and damage reputations on a systemic scale.
- ❑ Costa warns that true progress in fighting corruption depends on independent and resilient institutions—particularly the judiciary—and the protection of prosecutorial autonomy, investigative journalism, and the rule of law.
- ❑ Unethical behavior often arises from a combination of pressure, opportunity, and lack of accountability. When impunity becomes normalized, corruption turns into a structural feature of institutions rather than an exception.
- ❑ For justice and ethical behavior to endure, integrity must move beyond compliance to become a shared cultural value. Costa calls for collaboration among governments, corporations, academia, and civil society to embed transparency, education, and accountability at every level of governance.



SUSTAINABILITY

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CORPORATE CLIMATE ADAPTATION: FROM RISK AWARENESS TO STRATEGIC ACTION



While many companies see climate adaptation as a risk management obligation, forward-looking firms are discovering new business opportunities.



Deborah Câmara Batista, FGV Alumna and Climate Change Research Consultant, and **Jorge Juan Soto Delgado**, Professor at **FGV EAESP** and Director of Sustainable Development at Braskem SA, share the cases of three leading Brazilian companies to call for a move away from climate mitigation to adaption.

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The climate crisis is no longer a distant threat. For companies, it's a daily reality that disrupts supply chains, damages infrastructure, and alters market dynamics. Yet, most corporate responses still focus on mitigation — efforts to reduce greenhouse gas emissions — while overlooking the urgent need for adaptation.

Our article draws on a multiple case study of three leading Brazilian companies that have begun implementing climate adaptation strategies. It highlights the challenges, opportunities, and solutions that can guide businesses toward greater resilience in a warming world.

WHY ADAPTATION MATTERS

The Intergovernmental Panel on Climate Change (IPCC) warns that adaptation is no longer optional. Climate change is already affecting rainfall patterns, temperature averages, and the frequency of extreme weather events. While mitigation remains crucial, it is insufficient to protect businesses from the escalating risks. Adaptation involves adjusting operations, infrastructure, and governance to anticipate and respond to climate impacts.



Still, most companies are slow to act. Among over 9,000 global companies reporting to the CDP in 2021, only six Brazilian firms received top scores for their adaptation efforts. The research presented here focuses on three of them, offering valuable lessons.

FOUR PROFILES OF CLIMATE RESPONSE

Companies tend to fall into one of four categories:

- **Preventive adapters**, which proactively invest in infrastructure and processes to avoid losses;
- **Reactive adapters**, which respond only after being affected by climate events;
- **Continuous adapters**, which integrate adaptation into their core operations;
- **Deferred adapters**, which delay action, assuming low vulnerability or low exposure.

The study found that a company's perception of risk — shaped by both scientific data and organizational culture — plays a critical role in determining its adaptation strategy.

ADAPTATION IN PRACTICE: FROM RISK TO RESILIENCE

The three case companies demonstrated different stages of maturity in adaptation. Common elements in their approach included:

- **Advanced risk management frameworks**, such as ERM (Enterprise Risk Management), tailored to account for climate uncertainty.
- **Scenario planning** that incorporates long-term climate projections.
- **Collaborative governance**, involving sustainability teams, operational leaders, and executive boards.
- **Dual strategies** that combine hard solutions (e.g., infrastructure upgrades) and soft ones (e.g., behavioral changes and stakeholder engagement).

Examples of concrete measures included improving water reuse systems, investing in predictive weather technologies, revising supply chain logistics, and shifting toward renewable energy sources — that, in some cases, led to reduced emissions as co-benefits.

OPPORTUNITIES BEYOND COMPLIANCE

While many companies see climate adaptation as a risk management obligation, forward-looking firms are discovering **new business opportunities**. These include:

- Creating new products aligned with low-carbon lifestyles;
- Entering green markets, such as renewable energy and carbon credits;
- Developing consulting services to share their adaptation expertise;
- Increasing operational efficiency and reducing costs through resource optimization.

In one case, adaptation efforts led to the development of an entirely new revenue stream, illustrating how climate action can drive innovation.

THE ROLE OF COLLABORATION AND GOVERNANCE

Adaptation does not happen in a vacuum. The research emphasizes the importance of ecosystems of collaboration, involving suppliers, regulators, civil society, and communities. The companies studied engaged in:

- Local water reuse projects in response to hydrological stress;
- Joint research and innovation partnerships;
- National and international sustainability forums, which serve as learning platforms and influence policy agendas.

However, **barriers remain**. These include the lack of regulatory frameworks, limited access to climate data in business-friendly formats, short-term investment horizons, and internal resistance to change. Overcoming these barriers requires:

- Participatory decision-making;
- Cross-sector knowledge exchange;
- Flexible, adaptive governance models;
- Long-term thinking across departments.

LOOKING AHEAD: A CALL TO ACTION

The research concludes that adaptation must become a core element of corporate strategy — not just for compliance or resilience, but for long-term competitiveness. Companies have the potential to support public institutions, mobilize resources rapidly, and co-create systemic solutions for climate-resilient development.

Importantly, climate impacts extend beyond company walls. To truly reduce risk, firms must consider their **value chains, ecosystems, and social context**. They must also acknowledge that building resilience is not only a technical challenge, but a political, cultural, and ethical one.

By investing in adaptive capacity today, businesses not only safeguard their operations — they contribute to a more sustainable and equitable future for all. ///

KEY TAKEAWAYS

▣ **Adaptation is no longer optional:** Climate change already disrupts supply chains, infrastructure, and markets. While emission reduction (mitigation) remains vital, it is insufficient — companies must now adapt to unavoidable impacts.

▣ **Four types of corporate responses:** Firms fall into four adaptation profiles:

- **Preventive** (proactive and forward-looking),
- **Reactive** (responding post-impact),
- **Continuous** (integrating adaptation into core operations), and
- **Deferred** (delaying action due to perceived low risk).

▣ **Risk perception drives strategy:** How companies interpret climate risk — influenced by both data and organizational culture — strongly determines their level of preparedness and type of adaptation response.

▣ **Effective adaptation blends hard and soft measures:** Successful companies combine infrastructure upgrades, water management, and renewable energy investments ("hard" measures) with behavioral changes, collaboration, and stakeholder engagement ("soft" measures).

▣ **Governance and collaboration are central:** Adaptation succeeds when sustainability, operations, and executive leadership coordinate through integrated risk management and scenario planning — supported by partnerships across suppliers, regulators, researchers, and communities.

▣ **Adaptation creates business opportunities:** Beyond compliance, adaptation can spark innovation — from new low-carbon products and consulting services to efficiency gains and new revenue streams, turning resilience into a competitive advantage.

▣ **Systemic barriers hinder progress:** Companies still face major obstacles, including weak regulation, poor access to usable climate data, short-term financial thinking, and internal resistance to cultural change.

▣ **Adaptation as a strategic and ethical imperative:** Embedding adaptation into corporate strategy enhances competitiveness and contributes to societal resilience. True climate readiness requires long-term thinking, cross-sector collaboration, and acknowledgment of climate change as both a technical and moral challenge.

BATTERY ENERGY STORAGE SYSTEMS: FULL CHARGE AHEAD?



BESS will play a significant role in providing grid flexibility to power systems.



Inès Letellier, ESSEC Business School student, and **Alexanne Dieu, LSE** Alumna, analyse investment in Battery Energy Storage Systems to identify the factors that will either slow down or accelerate the pace of its usage.

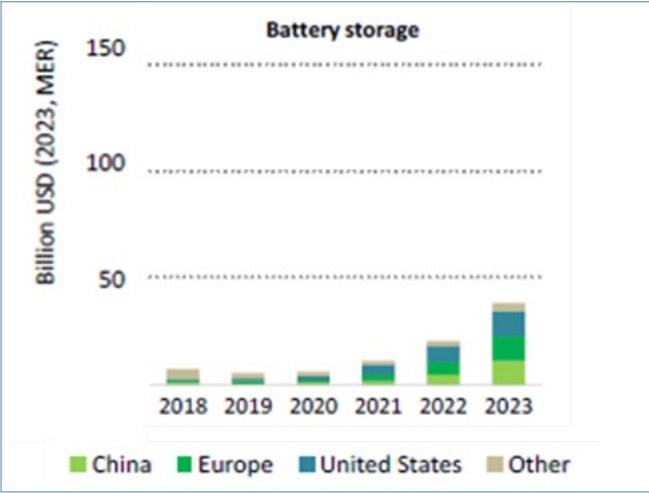
SUBSTANTIAL INCREASE IN BESS INVESTMENT AND STORAGE CAPACITY

BESS – or **Battery Energy Storage Systems** – are energy storage technologies playing a crucial role in the renewable energy storage sector. By storing electricity from renewable energy sources (wind, solar, hydro, among others), they are able to release it during peak demand periods, power outages, or times of high electricity prices. Batteries for energy storage are essential for balancing energy supply and demand, stabilizing the grid, reducing the cost of electricity and diversifying sources of energy dependence.

In the last decade, global installed battery storage has increased substantially, from 1 GW in 2013 to c.96 GW in 2024¹, with over 40 GW added in 2023 alone.² Total investment in battery storage was 40 billion USD in 2023, up 300% from 2021², an increase due to more regions adopting supportive policies and higher penetration of intermittent renewable energy, in turn providing expanded opportunities for profitable battery storage operations.

1. Global battery industry - statistics & facts | statista
2. Batteries and Secure Energy Transitions, World Energy Outlook Special Report, International Energy Agency

Global deployment of battery storage is projected to continue increasing rapidly in the coming years. Indeed, depending on the IEA's 2030 assumed projection, global installed battery storage capacity is set to increase from 9 to 14-fold over the next six years². This is equivalent to tripling BESS investment, reaching approximately 90-140 billion USD (depending on scenario assumptions) by 2030², with some estimates going as high as 150 billion USD³. However, reaching such a high level of investment depends on how some key challenges are addressed in the next few years.



A LACK OF UNIFIED REGULATION AND THE CHALLENGES LINKED TO UNEQUAL MARKET ACCESS

Focusing on the European market, one main challenge for investment is the lack of a clear, stable and unified regulatory environment. While EU member states are collectively targeting deployment of around 45 GW of storage by 2030 through National Energy and Climate Plans, regulations differ widely from country to country².

The first key issue is grid connection: some countries have incentivised BESS development by applying exemptions from certain grid fees (for example in Germany and Belgium), while others suffer from high grid-related fees and administrative backlog (e.g., Netherlands). Another challenge is that BESS do not always have equal access to power markets when compared to other technologies.

Typically, a BESS should be able to operate on three different types of markets: the capacity market, wholesale market for arbitrage, and ancillary services. In Germany & the UK, BESS have access to all three markets, however, in some other EU countries the access to ancillary services is still limited.

Finally, uncertainty over long-term revenues is a key barrier to investment that can be partly overcome by supportive regulation. For instance, Terna (Italy's grid operator)⁴, has developed a favourable capacity market providing 15-year fixed price contracts to BESS projects to compensate for storage availability; however, in Spain the lack of a functional capacity market is hindering further BESS development.

4. European BESS offtake & financing – state of play

DIVERSIFIED BATTERY STORAGE TECHNOLOGIES, AND A RESULTING UNCERTAIN INVESTMENT ENVIRONMENT.

More so than just a lack in unified legislation, BESS are also subject to a lack in unified technologies – in turn creating uncertainty for investors. The current market for grid-scale storage batteries is dominated by lithium-ion batteries⁵. The first li-ion chemistry to have penetrated the market: NMC batteries (nickel manganese cobalt), are energy-dense and able to deliver bursts of energy quickly – ideal for applications that require high instantaneous power⁶.

Although LFP (lithium iron phosphate) batteries, the successor to NMCs, are less energy-dense, they have a longer lifespan⁷, cheaper and emit less GHG on a lifecycle basis. Accordingly, the LFP is well suited for applications that prioritize sustained power delivery and longevity, particularly: grid-scale energy storage.

As of 2023, LFPs represent 80% of BESS capacity, and will likely remain the dominant chemistry in the near future⁸. Whilst sodium ions are less energy dense⁹ than lithium ions, sodium is abundant and cheap. Na-ion batteries will be present on the BESS market by 2030 with c. 10% of annual capacity.

With significant R&D¹⁰ already underway in China, the first Na-ion batteries will come mainly that country, but the technology is set to expand further beyond that region¹¹. Although Na-ion batteries could in theory be 20-30% cheaper than li-ion, competing on cost will only be possible if manufacturing is scaled up to levels comparable to li-ion and if lithium prices increase.

Due to the existence of various technologies, the uncertainty regarding which will be dominant, has already had an implication on investment, with certain projects being re-powered from NMC chemistries to LFP. Technology obsolescence risk therefore remains a prominent part of the credit risk analysis.

5. Grid-Scale Battery Storage: Frequently Asked Questions
6. LFP vs NMC Batteries: A Comprehensive Analysis
7. Navigating battery choices: A comparative study of lithium iron phosphate and nickel manganese cobalt battery technologies
8. Batteries and Secure Energy Transitions Page 91
9. 6 alternatives to lithium-ion batteries: What's the future of energy storage?
10. Energy storage systems: a review
11. Batteries and Secure Energy Transitions



A GEOGRAPHICALLY CONCENTRATED GLOBAL VALUE CHAIN, SUBJECT TO TARIFFS AND PROTECTIONIST MEASURES

Regarding raw material supply and extraction, Australia produces almost 45% of the world's lithium, DRC accounts for 65% of the global cobalt production, and Indonesia represents 55% of total nickel supply. China then undertakes well over half of global raw material processing for lithium, cobalt and natural graphite and has almost 85% of global battery cell production capacity.

Battery metals and their ensuing processing are thus highly geographically concentrated and are therefore vulnerable to geopolitical disruptions, and thus vulnerable to supply shocks and constraints. The BESS value chain is also particularly subject to tariffs and protectionist measures.

In 2024, the US more than tripled the tariffs paid on batteries and battery parts imported into the US from China, from 7.5% to 25%. This raised costs for US BESS integrators by 11 to 16%¹². Tariffs and protectionist measures retaliating against the dominance of Chinese battery supply hide behind critiques of harmful environmental and social impacts¹³, associated with the extraction, processing, and use of mineral raw materials. In the trade-off between cost, availability of supply, and autonomy, the US and the EU are choosing autonomy.

12. New US-China battery tariffs to increase BESS costs by 11-16%
13. Carbon and social impacts in the EU's consumption of fossil and mineral raw materials

In the US, as seen from recent tariff policies under the new Trump administration; and in the EU, through legislations such as the Critical Raw Materials Act and the EU Repower Plan. Yet, unless the EU is prepared to lower their decarbonization ambitions, moving away from Chinese production and supply of storage batteries altogether is not possible. Although battery production is set to diversify in the coming years, the share of China in li-ion battery manufacturing capacity will remain high (67% in 2030¹⁴).

By imposing tariffs, the EU is accepting to pull the brakes on BESS cost reductions and therefore possibly weaken its transition efforts. European start-ups like Vanadis Powers, Genista Energy and VoltStorage focusing on vanadium redox and iron-salt batteries, could be instrumental in upcoming years to ensure BESS security of supply and facilitate the energy transition, if they are themselves able to break into the European market.

A FUTURE FOR BATTERY PART RECYCLING AND SECOND-LIFE APPLICATIONS?

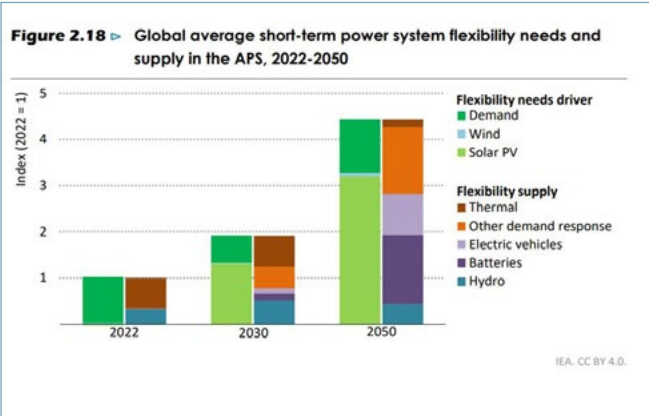
Critical is also the need to recycle battery metals. Recycling of battery metals like nickel, cobalt, and lithium has grown rapidly, with recovery rates in 2023 reaching over 40% for nickel and cobalt, and 20% for lithium¹⁵. Moreover, the market value of recycled metals grew nearly 11-fold between 2015 and 2023, with 40% of this growth occurring in the last three years. Scaling up recycling could reduce new mining needs by 25-40% by 2050, aligning with global climate goals, and cutting emissions from lithium, nickel, and cobalt production by 35% by 2040.

Battery metals recycling would therefore also reduce the amount of financial investment needed in new mining. This progress has mainly been driven by recent EU policy support and regulation¹⁶, most recently the Clean Industrial Deal which aims to have 24% of materials circular by 2030¹⁷. Complementary to governmental support for recycling, EV manufacturers, Volvo¹⁸, Renault¹⁹ and Nissan²⁰ have also committed to repurposing their EV batteries for a 2nd life application in energy storage services, suitable to their reduced performance capabilities²¹.

14. Batteries and Secure Energy Transitions
15. Executive summary – Recycling of Critical Minerals – Analysis - IEA
16. Policy database – Data & Statistics - IEA
17. EU Clean Industrial Deal, p. 14-15: 9db1c5c8-9e82-467b-ab6a-905feeb4b6b0_en
18. Volvo to collaborate on recycled battery BESS - Power Technology
19. Stockage stationnaire d'énergie et batteries de véhicules électriques
20. Nissan, Sumitomo Corporation and 4R set up plant to recycle electric-car batteries | Sumitomo Corporation
21. Electric vehicles, second life batteries, and their effect on the power sector | McKinsey

The second life-battery supply for stationary applications could exceed 200 GWh/year by 2030²². EV battery packs could also be processed to extract valuable rare-earth materials. Expanding battery recycling and reuse is essential for reducing environmental impact, conserving resources, and supporting the transition to sustainable energy systems.

BESS: ONE SOLUTION WITHIN A MYRIAD



Although BESS will play a significant role in providing grid flexibility to power systems which are characterised by an increasing share of variable renewables, it is important to realise they are part of a series of options. These options include providing other types of storage (e.g. pumped hydro storage & thermal power plants) and adapting demand response, for instance through flexible operation of electrolysers or curtailment.

In the Announced Pledges Scenario, which assumes that governments will deliver on all announcements made, the IEA expects that batteries will represent only c. 10% of flexibility supply in 2030, and this number will rise to c. 34% by 2050. The remaining flexibility supply relies on the development on other demand response (c. 34% by 2050), smart electric vehicle charging (c. 23% by 2030) and hydro storage (c.9%). BESS are crucial, but they represent only a part of the solution for decarbonizing our power systems.

22. Electric vehicles, second life batteries, and their effect on the power sector | McKinsey

KEY TAKEAWAYS

- **Massive growth in BESS capacity and investment**
 - Global installed battery storage jumped from 1 GW in 2013 to ~96 GW in 2024, with >40 GW added in 2023 alone.
 - Investments reached \$40 billion in 2023 (a 300% increase since 2021), and could rise to \$90–150 billion annually by 2030 depending on policy and market conditions.
- **Regulatory fragmentation in Europe hinders growth**
 - EU targets ~45 GW of storage by 2030, but regulations differ widely by country.
 - Key barriers include grid connection costs, administrative delays, and unequal market access.
 - Long-term revenue certainty is critical, with examples like Italy’s 15-year capacity contracts versus Spain’s stalled market design.
- **Technology risk creates investor uncertainty**
 - Lithium-ion dominates today, with LFP batteries making up ~80% of BESS capacity due to lower costs and longer lifespan compared to NMC.
 - Sodium-ion batteries could reach ~10% of annual capacity by 2030, especially from China, but cost competitiveness requires scaling.
 - Technology shifts (e.g., repowering projects from NMC to LFP) highlight ongoing risks of obsolescence.
- **Highly concentrated supply chains pose risks**
 - Raw materials: lithium (Australia, 45%), cobalt (DRC, 65%), nickel (Indonesia, 55%).
 - China dominates processing (~50%) and battery production (~85%).
 - This concentration makes BESS vulnerable to geopolitical disruptions and supply shocks.
- **Protectionist measures increase costs**
 - The US raised tariffs on Chinese batteries from 7.5% to 25% in 2024, lifting costs for US BESS integrators by 11–16%.
 - EU measures like the Critical Raw Materials Act push for autonomy but risk slowing cost reductions and weakening the transition.
- **Recycling and second-life applications are advancing**
 - Battery metal recycling recovery rates in 2023: ~40% for nickel and cobalt, 20% for lithium.
 - Recycled metal market value grew 11-fold since 2015.
 - By 2050, recycling could reduce mining demand by 25–40% and cut emissions by ~35%.
 - EV makers (e.g., Volvo, Renault, Nissan) are repurposing old batteries, with second-life supply possibly exceeding 200 GWh/year by 2030.
- **European innovation could diversify the market**
 - Start-ups like Vanadis Powers, Genista Energy, and VoltStorage are exploring vanadium redox and iron-salt batteries as alternatives to lithium-based systems.
 - Success could strengthen European energy security and reduce reliance on Chinese supply.
- **BESS is only part of the flexibility mix**
 - By 2030, batteries are expected to provide ~10% of grid flexibility, rising to ~34% by 2050.
 - Other key contributors include demand response (~34% by 2050), EV smart charging (~23% by 2030), and hydro (~9%).
 - While BESS is central, the transition requires a diversified portfolio of flexibility solutions.

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WHY SINGAPORE MAY HOLD THE KEY TO GREEN LEADERSHIP IN ASIA — AND WHY THE WORLD SHOULD CARE



While many countries are still drafting roadmaps, Singapore is operationalizing carbon markets with precision.



Can a city-state of just 6 million shape the climate future of an entire region? Singapore is betting big on green energy, carbon markets, and regional partnerships. But beyond infrastructure and capital, a deeper question looms: Do we have the people — and the cultural intelligence — to lead together? **Yingying Li**, Co-founder & President of the **Green Expertise Council**, explores why Singapore is rising, what's still missing, and how we can co-create a new kind of climate leadership.

AT THE CROSSROADS OF GLOBAL DISRUPTION

As U.S.-China dynamics intensify and global climate action faces continued setbacks, Singapore finds itself at a rare geopolitical intersection: neutral, competent, and future-oriented. It has emerged as a trusted interlocutor in global dialogue and is now seeking to leverage this unique position to become a catalyst for Asia's green transformation.

Singapore is not simply playing catch-up in the sustainability race. It is making a deliberate bid to lead. Through a blend of pragmatic governance, strategic positioning, and financial innovation, it is building an ecosystem where green ambition meets execution.



SINGAPORE'S GREEN AMBITION: FROM DOMESTIC POLICY TO REGIONAL RELEVANCE

At the heart of Singapore's sustainability strategy lies the **Singapore Green Plan 2030** — a whole-of-nation movement built on five strategic pillars: Energy Reset, Green Economy, Sustainable Living, Resilient Future, and City in Nature.

Key targets include:

- Quadrupling solar energy deployment to at least 2 GWp by 2030
- Importing up to 6 GW of low-carbon electricity by 2035, expected to meet 30% of national demand
- Raising the carbon tax from SGD \$5/ton today to between \$45–80/ton by 2030, one of Asia's highest planned rates
- Installing 60,000 EV charging points and transitioning all diesel buses to electric
- Reducing landfill waste by 30% and making 20% of schools carbon-neutral by 2030.

The government has also launched a Green Bond Framework, issued its sovereign green bonds, and joined initiatives like the Glasgow Financial Alliance for Net Zero (GFANZ) to catalyze climate capital. The **Sustainable Finance Action Plan and Project Greenprint** by MAS (Monetary Authority of Singapore) aim to embed sustainability data and ESG assurance into the financial system. These efforts reflect a model of green governance rooted in data, clarity, and long-term thinking.

SOUTHEAST ASIA'S GREEN COMPASS: FROM VISION TO EXECUTION

Singapore's green strategy isn't limited to its borders — it is also helping shape the trajectory of Southeast Asia. In June 2022, Singapore received its first imported renewable electricity through the Laos–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP), ASEAN's first multilateral cross-border electricity trade. This project delivered up to 100 MW of renewable hydropower from Laos, marking a breakthrough in regional energy cooperation.

To accelerate this momentum, Singapore increased its low-carbon electricity import target from 4 GW to 6 GW, with conditional approvals granted to 10 projects involving Cambodia, Indonesia, Vietnam, and Australia. This move has not only unlocked substantial private-sector interest, but

also positioned Singapore as a demand-side anchor driving regional investment in green infrastructure.

Singapore's energy ecosystem now hosts over 100 clean energy companies, from developers like Vena Energy and Sembcorp, to service providers like Schneider Electric, to R&D leaders like SERIS. The commissioning of Southeast Asia's largest energy storage system (ESS) — a 285 MWh project by Sembcorp — further illustrates how Singapore combines scale with innovation.

Through the Financing Asia's Transition Partnership (FAST-P), MAS seeks to mobilize US\$5 billion in blended finance to accelerate decarbonization, especially in coal phase out, renewable infrastructure, and emerging technologies like hydrogen and carbon capture.

CARBON LEADERSHIP: SHAPING THE MARKETS OF TOMORROW

While many countries are still drafting roadmaps, Singapore is operationalizing carbon markets with precision.

1. Carbon Services Ecosystem

Singapore is now home to over 150 carbon services companies, creating one of the most comprehensive

ecosystems in Asia. These firms specialize in project origination, MRV (monitoring, reporting, verification), carbon credit certification, trading, and legal structuring.

Key players include:

- **South Pole** (environmental consulting)
- **Verra** (standard-setting body)
- **BeZero Carbon** (carbon ratings agency)
- **Carbon Trust**
- Singapore-based consultancies and startups that serve clients across Southeast Asia.

This ecosystem allows Singapore to serve as a regional launchpad for high-integrity carbon projects.

2. Climate Impact X (CIX)

Launched in 2021 by DBS, SGX, Temasek, and Standard Chartered, CIX is a global marketplace for voluntary carbon credit trading. It features both an auction platform and a curated marketplace, facilitating transparent transactions with an emphasis on quality and integrity.

By 2024, CIX had facilitated millions of dollars in credit trades, focusing on nature-based solutions and engineered removals.

3. Financial Infrastructure for Carbon

MAS has been actively integrating carbon into financial frameworks:

- Project Greenprint: Developing ESG disclosure tools
- FAST-P: Blended finance platform supporting decarbonization
- Green and Transition Taxonomies: Enabling sustainable classification of carbon-related activities.

4. Article 6 Bilateral Agreements

Singapore has signed bilateral carbon credit transfer agreements under the Paris Agreement's Article 6 with countries like Ghana and Papua New Guinea, aiming for high-integrity carbon trading that can count toward national targets.

WHY SINGAPORE IS UNIQUELY POSITIONED TO LEAD

Before we examine the critical role of standards and talent, it's worth asking: Why could Singapore be considered so uniquely suited to lead Asia's green transformation?

An answer lies not just in policy or capital, but in accelerating the real-world momentum we can observe today.

Singapore's strategic location at the heart of Southeast Asia also gives it regional visibility and access to one of the world's most dynamic growth zones. Its legacy of safety, rule of law, and political stability makes it an ideal sandbox for emerging technologies and frontier business models to take root. Time and again, Singapore has proven to be a trusted launchpad for global businesses seeking regional scale.

Equally important is the government's proactive stance. Through thoughtful regulation, public-private partnerships,



and long-term planning, Singapore actively engineers a safety net for innovation. It deliberately positions itself as a testbed — not just for Singapore's benefit, but to serve the broader ASEAN region as a hub for sustainable development.

This isn't just theory — we are already witnessing a surge of climate tech companies, green manufacturers, and capital-backed international sustainability ventures selecting Singapore as their launchpad into Southeast Asia. Whether driven by supply chain diversification, strategic decarbonization, or global realignment, Singapore is increasingly being chosen, not just by default, but by deliberate design.

Compared to traditional climate finance centers like Switzerland or rising investment hubs in the Gulf, Singapore offers something different: proximity to climate-vulnerable regions, direct access to high-growth ASEAN markets, and a legal-regulatory environment built for experimentation and trust.

In a world where continuity and coherence are increasingly rare, Singapore's stability, credibility, and convening power aren't just strengths — they are strategic assets for the green future.

NAVIGATING THE QUESTION OF STANDARDS AND LEADERSHIP

As Singapore positions itself as a green leader in Asia, one critical question lingers beneath the surface: In the evolving landscape of global sustainability and climate governance, who gets to set the rules?

Singapore's push toward leadership in green finance, energy transition, and carbon markets inevitably intersects with international standards — from the ISSB (International Sustainability Standards Board) to Article 6 rules under the Paris Agreement, and frameworks like TCFD, TNFD, or the EU Taxonomy.

Will Singapore align itself closely with these top-tier, globally accepted standards — adapting fast to new ESG disclosures, reporting regimes, and market rules? Or will it gradually tailor its own rulebook, creating region-specific mechanisms that respond more closely to the Southeast Asian context?

This tension — between following and shaping — is not a weakness, but a mark of maturity and ambition. It signals that Singapore is not merely implementing compliance frameworks, but grappling with how to lead responsibly in a multi-polar, multi-speed climate transition.

What's at stake is more than governance: it's about credibility, influence, and long-term trust.

We invite you to reflect: Should Singapore aim to be a model follower of global standards, or a pragmatic architect of regional ones? What are the risks and opportunities of each path? This is a conversation worth having.

THE TALENT CHALLENGE: BUILDING HUMAN INFRASTRUCTURE

Talent: Singapore's Crown Jewel — and Its Climate Test.
To be the "green bridge" between East and West, Singapore needs:

- Cross-cultural facilitators who build trust across jurisdictions
- Carbon market professionals who combine credibility and compliance
- Green finance experts who understand ESG risks, structures, and data
- Hybrid thinkers who can bridge policy, science, and business.

Efforts are underway:

- SkillsFuture, EDB, and together with international partners, have launched ESG and carbon trading training
- NUS, SMU, and other institutions offer certificates in carbon services and sustainable finance
- S\$20 million has been committed to building carbon talent capability
- The Singapore Carbon Market Association (SCMA) is fostering dialogue and industry alignment.

But this is still just the beginning. The scarcest resource in climate leadership isn't capital. It's human capacity — and cultural intelligence. Because in a world fragmented by silos — whether academia, government, finance, or startups — we don't just need more specialists. We need bridge-builders: people willing to step outside their informational comfort zones and engage with unfamiliar realities. Cultural intelligence enables us to identify gaps in understanding and build bridges where others see division. It's not about

having all the answers — it's about the empathy, humility, and curiosity to collaborate across differences.

Take Singapore, for example. It has no shortage of sustainability-minded investors, climate finance professionals, or ESG experts. But if we only engage with these issues from air-conditioned offices over lattes and dashboards of metrics, we risk losing sight of what really matters — and how complex systems operate on the ground. To understand how to deploy capital effectively, we must understand how energy is generated and distributed, how nature-based solutions function in reality, how local communities perceive interventions, and what real environmental impact looks like.

This requires deep, cross-disciplinary curiosity, empathy, and sometimes, risk-taking, not just financial modeling.

A case in point: the voluntary carbon market, especially in nature-based solutions. Success here depends on far more than technology or credit pricing. It requires a whole system of trust: from governments that can define credible baselines and issue policies, to investors who are willing to fund projects even when all the variables aren't yet visible. But more importantly, it demands cultural intelligence: the ability to bridge Global North–South perspectives, understand local context, and co-create value across borders.

In many cases, the most transformative solutions arise when we courageously connect seemingly unrelated sectors — local landowners with international verifiers, policy negotiators with forest stewards, financiers with indigenous leaders. It is in these unlikely connections that true innovation happens.

This is why in the months ahead, I will explore what it takes to bridge these gaps — and how we can co-create systems that don't just scale technology, but scale wisdom.

IS SINGAPORE READY — AND HOW CAN THE WORLD HELP?

Let's ask the deeper questions:

- Is Singapore nurturing the right ecosystem of talent, technology, and trust?
- What gaps remain in our education, training, and leadership pipelines?
- How can AI and cross-cultural leadership accelerate this transition?
- What frameworks from other countries could be localized and adapted here?
- How do we build shared standards, joint platforms, and mutual talent flows across the region?

Singapore's ambition is clear. Its leadership is emerging. But ambition alone won't shape the future — capacity will.

KEY TAKEAWAYS

- **Singapore's Strategic Positioning:** Amid intensifying U.S.–China tensions and stalled global climate progress, Singapore has emerged as a neutral, credible, and future-oriented hub — using its geopolitical stability and trust capital to position itself as a regional catalyst for Asia's green transformation.
- **The Singapore Green Plan 2030:** Singapore's whole-of-nation strategy is anchored on five pillars — *Energy Reset*, *Green Economy*, *Sustainable Living*, *Resilient Future*, and *City in Nature*. Key goals include:
 - Quadrupling solar capacity to 2 GWp by 2030
 - Importing 6 GW of low-carbon electricity by 2035
 - Raising carbon tax to SGD \$45–80/ton
 - 60,000 EV charging points, 100% electric buses
 - 30% landfill waste reduction, 20% of schools carbon-neutral
- **Financial Innovation as a Green Enabler:** Through initiatives like the Green Bond Framework, Project Greenprint, and Sustainable Finance Action Plan, Singapore is embedding sustainability into its financial architecture. The Monetary Authority of Singapore (MAS) plays a central role in aligning finance with decarbonization and ESG standards.
- **Regional Leadership in Energy Transition:** Singapore is driving ASEAN's green integration, demonstrated by the Laos–Thailand–Malaysia–Singapore Power Integration Project — the first multilateral renewable energy trade in the region. It is scaling up to 6 GW of clean electricity imports, attracting private investment and anchoring regional green infrastructure.
- **Building a Carbon Leadership Ecosystem:** Singapore hosts Asia's most comprehensive carbon services hub, with 150+ firms in carbon consulting, certification, and trading. Key platforms include:
 - Climate Impact X (CIX): global marketplace for high-integrity voluntary carbon credits.
 - FAST-P: US\$5 billion blended finance platform for decarbonization.
 - Article 6 agreements with countries like Ghana and Papua New Guinea — integrating carbon credits into national targets.
- **Governance and Trust as Strategic Assets:** Singapore's rule of law, policy coherence, and innovation-friendly regulation make it a trusted launchpad for global sustainability ventures. Unlike traditional hubs (e.g. Switzerland or the Gulf), it combines proximity to climate-vulnerable regions with strong institutional credibility.
- **The Standards and Leadership Dilemma:** As Singapore shapes the region's green future, it faces a strategic choice:
 - Align tightly with global standards (ISSB, TCFD, EU Taxonomy), or
 - Develop region-specific frameworks suited to Southeast Asia's context.This tension — between adapting and leading — reflects its maturity as a sustainability frontrunner.
- **Talent as the Critical Bottleneck:** Singapore's biggest challenge isn't capital — it's human capacity and cultural intelligence. To lead meaningfully, it needs cross-disciplinary, cross-cultural professionals who can bridge policy, finance, and on-the-ground realities. Ongoing initiatives (SkillsFuture, SCMA, university programs) mark progress, but true leadership will depend on developing "bridge-builders" who unite diverse sectors and perspectives.

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THE DIGITAL POLITICAL ARENA: WHEN MARKETING, MEDIA, AND DISINFORMATION COLLIDE



Ignoring the interconnectedness of media, disinformation, and public opinion is like trying to navigate a stormy sea without understanding the winds and currents.



Prof. **Raoul V. Kübler** of **ESSEC Business School**, **Kai Manke** of the **University of Munster**, and Prof. **Koen Pauwels** of **Northeastern University** map the high-stakes

digital ecosystem of modern political campaigns. By analysing over 200 million social media posts, they reveal a system where polls, ads, and disinformation interact in powerful feedback loops, often with unintended consequences. Their findings show that political support is no longer just won on the ground or the airwaves, but in a complex digital echoverse where every like, share, and news article can alter the political landscape.

Insight by CoBS Editor Hari Chandana Chinni.

Related research: I like, I share, I vote: Mapping the dynamic system of political marketing, Raoul V. Kübler, Kai Manke, Koen Pauwels, 2025, Journal of Business Research, <https://doi.org/10.1016/j.jbusres.2024.115014>

We often hear about political campaigns as marketing battles, where candidates sell themselves like brands. Billions are spent on TV ads, social media campaigns, and polling to understand and influence voter behaviour. The story typically ends with a winner, a loser, and post-election analysis. But what happens between the ads, the tweets, and the polls? How do these elements interact in a real-time, dynamic system? These are the questions we rarely get answered.



In a landmark study, Prof. Raoul Kübler, Kai Manke, and Prof. Koen Pauwels move beyond isolated tactics to map the entire political marketing system. Using a massive dataset from the 2016 and 2020 U.S. presidential elections, they show that this system is a highly interconnected “political echoverse.” Their research reveals that actions by one stakeholder, a candidate’s tweet, a news article, a viral disinformation story create ripple effects that influence all others, often in counterintuitive ways. While most research celebrates digital reach, this study focuses on the unintended side effects: how disinformation spreads, how media amplifies chaos, and how campaigns can lose control of their own narrative.

From a pool of over 225 potential variables, the authors used advanced modelling to identify the key drivers. Their findings are striking not because they are unpredictable, but because they quantify the powerful, often damaging, dynamics that we intuitively know exist but have struggled to prove. If an election is a battle for public support, this study shows what happens when the battlefield is a hall of mirrors, distorting messages and intentions at every turn.

THREE DYNAMICS THAT DEFINE THE MODERN POLITICAL CAMPAIGN

So, what exactly drives this system? According to the study, it boils down to three core dynamics: the disinformation loop, the media amplification effect, and the metric paradox.

- **The Disinformation Loop.** The research provides robust evidence that disinformation is a central actor, not a sideshow. It is both a cause and a consequence of poll

movements. When a candidate like Hillary Clinton gained in the polls, it triggered a significant increase in disinformation targeting her, aimed at countering her momentum. This disinformation then directly reduced positive word-of-mouth about her and influenced media coverage. Crucially, the most effective disinformation was often partially grounded (e.g., Clinton’s emails), making it more potent than entirely fabricated conspiracies.

- **The Media Amplification Effect.** Despite the rise of digital media, traditional TV advertising remains a powerful force, directly affecting polls. However, the study reveals a troubling symbiosis: traditional media heavily reacts to social media chatter and, critically, to disinformation. In trying to report on or debunk false narratives, media outlets inadvertently amplify them, lending them credibility and further reach. This creates an «unholy alliance» where the lines between news and noise blur, and the media’s role as a neutral gatekeeper is compromised.

- **The Metric Paradox.** Campaigns traditionally live and die by polling numbers. However, the study reveals that over-reliance on polls is a dangerous game. The researchers found that different types of polls (traditional vs. probabilistic) respond differently to the same marketing actions. Furthermore, polls are a lagging indicator; by the time they move, the dynamics that caused the shift have already been in motion for days. The study shows that other metrics – social media sentiment, word-of-mouth volume, and media tone – often provide earlier and more nuanced signals of voter behaviour, yet they are frequently ignored in favour of the simplistic horse-race poll number.

WHY THIS MATTERS FOR CAMPAIGNS, MEDIA, AND DEMOCRACY

The consequences go far beyond one election cycle. When the political marketing system becomes this reactive and intertwined, it can erode trust in institutions, amplify polarization, and undermine the integrity of democratic discourse. Voters are left in an environment saturated with conflicting signals, while campaigns struggle to communicate their message through the chaos.

For campaign managers, this is a strategic wake-up call. Strategy cannot be based on polls alone. It requires a dashboard of indicators to monitor the digital ecosystem in real-time. Furthermore, understanding these feedback loops is crucial: a well-intentioned tweet from a candidate can trigger a chain of events that leads to a surge in damaging disinformation. Campaigns must be aware of their role not just as message senders, but as actors in a dynamic system they can never fully control.

A CALL FOR A SYSTEMIC VIEW

Kübler, Manke, and Pauwels make a compelling case for a new approach. They propose treating political marketing as a complex adaptive system, what they term the “political echoverse.” This means moving beyond studying single channels like only TV ads or only X (Twitter) and instead analysing how all stakeholders interact.

The takeaway? For business, media, and political leaders, the findings offer a clear directive: acknowledge the system. Ignoring the interconnectedness of media, disinformation, and public opinion is like trying to navigate a stormy sea without understanding the winds and currents. The study argues that platforms and policymakers must find ways to reduce the virulence of disinformation feedback loops, while media must re-evaluate its amplification role. Ultimately, a healthier political system depends on recognising that every action within this echoverse has a reaction, and that responsibility is shared. ///



KEY TAKEAWAYS

- Political marketing is a highly dynamic “echoverse” where all elements ads, media, social media, disinformation, and polls interact in powerful feedback loops.
- Disinformation is a core system driver: it is triggered by poll gains and, in turn, suppresses positive word-of-mouth and influences media coverage.
- Traditional media, while still powerful, often amplifies disinformation by reporting on it, inadvertently lending it credibility.
- Over-reliance on polling is risky; polls are lagging indicators that can mask what earlier metrics like social sentiment are showing.
- Campaign actions can have unintended consequences, triggering chain reactions that are difficult to control.
- A systemic view is essential. Understanding the interactions between stakeholders is more important than optimizing any single marketing channel.
- The study calls for greater responsibility from platforms and media to mitigate the damaging feedback effects of disinformation.

LEAN AND DIGITAL OPERATIONS STRATEGY: STOP BUILDING, START UNLOCKING GROWTH



The next time you are asked to approve a multi-million-dollar capital expense, ask yourself: Did we do everything possible to unlock the capacity that's already in plain sight?



Sai Srikar Desina, MBA candidate at **Smith School of Business, Queen's University**, explores why a Swiss chocolate maker's \$10,000 digital fix delivered more growth than million-dollar expansions and what Canadian executives can learn from looking inward instead of outward.

With kind acknowledgments to Prof. Geoffrey Pond. First published on Smith Business Insight.

Every executive's objective is an uninterrupted period of growth. And when margins tighten and growth slows, their instinct is predictable: Build more, spend freely, expand faster. That playbook now looks outdated. Canada's performance tells the story. Labour productivity rose only 0.2 per cent in the first quarter of 2025. Over the past decade, growth has averaged a meagre 0.5 per cent a year, barely half the pace of the U.S. For Canadian companies, this is the difference between staying competitive and being left behind. Which raises a challenging question for executives who are asked to sign off on multi-million-dollar expansions: Have we maximized capacity within our current operations?

At Helvoria Foods (not its real name), a medium-sized Swiss food manufacturer, leaders confronted that question head-on. Demand for their signature chocolate bars was rising. But efficiency was slipping, and margins were eroding. Their decision to look inward rather than outward holds lessons for every Canadian business leader trying to solve today's productivity paradox.

The Helvoria production facilities certainly looked busy. Orders were flowing in, and machines were running. But beneath the surface, capacity metrics told a worrisome story. Schedule attainment, the share of planned production completed on time, was stuck at just 66 to 69 per cent. Overall Equipment Effectiveness (OEE), which captures losses from downtime, slow running, and defects, hovered at only 56 per cent. Changeovers lasted more than an hour each, resulting in the plants losing the equivalent of 94,000 bars per month in revenue that could have been captured with smoother operations. Clearly, the factories were underperforming compared to industry benchmarks.

While all the core products showed losses, the Caramel Bar stood out. It alone was losing 51,000 bars every month to downtime, waste and changeovers. The obvious solution was to add another line to one of the factories. But Helvoria's executives paused and asked a different question: What if we already have the levers of growth but aren't using them?

Helvoria's successful turnaround is not a story about costly expansion or new technology. It's a story about leadership discipline, anchored in what can be referred to as the 3P model: People, Process and Progress.

PEOPLE, PROCESS, PROGRESS: EXECUTING ON THREE LEVELS OF CHANGE

People: Before, operators spent shifts waiting out downtime, were retrained without clear guidance and rarely received recognition when things went right. Under the new regime, workers were put back at the centre of operations. Teams were given cross-training to boost flexibility. Standard operating procedures were translated from text-heavy manuals to easy-to-follow step-by-step visuals. Lean Kaizen routines created space for small but steady improvements. And recognition replaced blame. The effect was immediate: Operators stopped being passive line-runners and became active problem-solvers.

Process: With workers engaged, discipline followed. Lean tools, such as SMED (Single-Minute Exchange of Die), were adopted to cut changeover times from hours to minutes, letting factories switch products faster and recover lost production capacity. Batching and sequencing minimized unnecessary stops, while smarter scheduling cut idle hours. Blocks of time that had been disappearing each week were now available to meet rising demand.

Progress: Helvoria managers made progress visible. Performance metrics, once buried in reports, were now tracked daily, creating accountability up and down the line. With a lean metric like Overall Equipment Effectiveness (OEE) publicized, downtime and slow running were impossible to ignore. Throughput, which measures the rate at which

the plant produces saleable products, revealed how much revenue could be generated with the same resources. With greater accountability, OEE jumped from 56 per cent to 73 per cent, and throughput increased by 1.6 million units a year.

Not a single dollar of capital expenditure was spent to get these results. But Helvoria leaders recognized that discipline alone would not be enough to sustain improvements. Visibility had to be taken to another level. It adopted a lean AI-based digital layer, a low-cost add-on that sits on top of existing systems, giving teams real-time insights without the burden of a full IT rebuild. AI diagnostics caught problems early, and digital standard operating procedures ensured every operator worked the same way, every time.

With this digital layer in place, downtime fell by 70 per cent and schedule attainment consistently hit above 90 per cent. The cost: about \$10,000 per plant annually in operating expenditure. This is a fraction of the more than \$75,000 a typical firm in Canada spends on digital pilots that never scale.



The lesson is clear: Technology doesn't replace discipline, it amplifies it. Without standardized processes, dashboards are just noise. With them, they become game changers.

LEAN AND DIGITAL GROWTH:
BRINGING THE LESSONS HOME

Why should Canadian executives care about the experience of an underperforming Swiss manufacturer? Because the story is painfully familiar. The Organization for Economic Co-operation and Development (OECD) has warned that Canada's productivity drag stems from underinvestment in digital adoption, underutilized talent and a tendency to equate growth with capital spending. That's the same trap Helvoria fell into before it reversed course.

Tariff uncertainty only sharpens the challenge. For executives, macroeconomic volatility is a reminder that tying growth to expensive capital projects is risky when trade rules can change overnight. The safer hedge is flexibility, unlocking capacity inside existing operations rather than betting everything on new ones.

Helvoria's experience underscores five lessons Canadian leaders can apply now:

- Hidden capacity beats new capacity: Canada's decade-long productivity plateau is not about insufficient assets. It is the result of underused assets. Like Helvoria, many firms already own the capacity they need but lose it every day to inefficiency. As of the first quarter of 2025, the Canadian industry operated at just 80 per cent of its production capacity.
- People-first transformation is a multiplier: Canada chronically underutilizes talent, particularly women, immigrants and younger workers. Helvoria proved that empowering operators with skills and recognition turns them from labour inputs into productivity multipliers.
- Lean and digital synergy are in lockstep: The OECD warns that digitization without process discipline fails. Helvoria's 3P model shows that lean principles set the stage for digitization to be sustainable. One without the other is wasted effort.
- Flexibility builds resilience: From tariffs to supply chain shocks, Canadian firms know disruption well. Helvoria weathered seasonal surges not by adding production lines but by creating flexibility within the ones it had.
- Start small, scale fast: Fearing complexity, executives often stall on digital adoption. Helvoria's AI-based digital layer pilot project proved that starting small with \$10,000 and one pilot line can yield results quickly and allow managers to scale with confidence.

Canada's productivity paradox is the product of underused people, invisible waste and leaders who equate growth with capital expenditure. The Helvoria Foods story shows another path: Smarter, not bigger. By empowering people, tightening processes and layering affordable digital tools, Helvoria met seasonal peaks, unlocked millions in hidden revenue and positioned itself for long-term growth without expanding capacity.

The next time you are asked to approve a multi-million-dollar capital expense, ask yourself: Did we do everything possible to unlock the capacity that's already in plain sight? ///

KEY TAKEAWAYS

■ Growth without expansion:

When productivity stalls, the instinct to build more is outdated. The smarter path is unlocking unused capacity within existing operations.

■ Canada's productivity warning:

With growth averaging only 0.5% annually over the past decade, Canadian firms risk falling behind unless they rethink how they use current assets.

■ Helvoria's turning point:

Instead of adding new lines, the Swiss manufacturer focused on fixing inefficiencies — improving schedule attainment, reducing downtime, and regaining lost output.

■ The 3P model — People, Process, Progress:

Helvoria's transformation hinged on empowering people, tightening processes, and making progress visible through metrics.

■ People drive performance:

Cross-training, clear procedures, and recognition turned operators into active problem-solvers, creating immediate productivity gains.

■ Discipline before digitization:

Lean methods like SMED and OEE tracking delivered strong results before a single digital tool was added — showing that process discipline must come first.

■ Affordable digital acceleration:

A \$10,000-per-plant AI layer amplified existing improvements, cutting downtime by 70% and pushing schedule attainment above 90%.

■ The new growth mindset:

Canada's leaders should look inward — empowering people, standardizing processes, and layering affordable digital tools — to grow smarter, not bigger.

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DATA COMMONS, THE NEW FRONTIER



Commons do not only redistribute access to information but also help open new opportunities for employment and capability building.



Guest academic **Angel Talamona**, Professor of AI Audit at the **University of Buenos Aires**, explores the landscape of global data storage and calls for a data commons which transforms data from a private asset into a collectively managed infrastructure that can be used by industry, regulators, researchers, and the public sector.

With kind acknowledgments to Prof. Adrian Zicari, ESSEC Business School

A GROWING ASYMMETRY

From energy production to industrial processing, the data that powers our economies is increasingly concentrated in the hands of a few corporations. Moreover, training and operating large-scale artificial intelligence require enormous datasets, highly specialized talent, and energy-intensive computing infrastructure.

These resources are concentrated in hyperscale cloud providers. Independent trackers show that the top three global providers now capture roughly two-thirds of enterprise spending on cloud infrastructure services. Their dominance has increased alongside the explosion of artificial intelligence workloads.

In addition, a second source of asymmetry arises from industrial equipment manufacturers. Connected machines used in mining, oil and gas, agriculture, and construction constantly generate telemetry data. Today, most of this information is collected, stored, and monetized by the manufacturers themselves, with operators who purchase the



machines often having no real control over the data produced in their own operations. In response to this imbalance, the European Union adopted the Data Act, which gives users of connected products the right to access and share machine-generated data and requires data holders to make it available under fair conditions. These provisions apply directly to industrial equipment and related services.

The result is a dual concentration of power. On one side, cloud providers centralize computing and talent. On the other, equipment manufacturers control the operational data on which whole industries depend. Both forms of concentration raise fundamental questions of sovereignty, responsibility, and innovation. In a world where data is increasingly becoming the new oil, the question of who controls data becomes a central issue for countries, companies, and society.

DATA COMMONS AS STRUCTURAL RESPONSE

A data commons is a shared and governed data resource with clear access rules, privacy and security safeguards, and oversight by multiple stakeholders. It transforms data from a private asset into a collectively managed infrastructure that can be used by industry, regulators, researchers, and the public sector.

This model already exists in practice. For instance, Norway's national petroleum data repository, DISKOS, has grown from about one petabyte in 2014 to more than thirteen by 2022, with seismic and well data stored in a secure

cloud environment managed by the Norwegian Offshore Directorate. Public evidence shows that this repository reduces exploration costs and improves efficiency by enabling coordinated access to geological information.

In electricity, the ENTSO-E Transparency Platform publishes real-time operational data across European transmission systems. It includes hourly generation and load figures, as well as cross-border flows, supporting coordination and transparency at continental scale.

Brazil provides another example through the platforms developed by ANEEL, the national electricity regulator. These services make operational and commercial data available to companies, researchers, and consumers. They support competition, integration of renewable generation, and public oversight of the sector.

Agriculture provides another example of sectoral data commons, with the United States Department of Agriculture operating the Ag Data Commons, a curated repository of thousands of datasets produced with public funding. The system ensures that research results are accessible, interoperable, and reusable.

These cases demonstrate that data commons can operate securely at national or continental scale, deliver measurable efficiency gains, and support public interest objectives. They also show that commons are feasible in sectors as diverse as petroleum, electricity, and food production.

COMMONS AS PREREQUISITE INFRASTRUCTURE FOR AUTONOMOUS SYSTEMS

As a definition, a sovereign autonomous system is one whose design and operation remain under the jurisdictional and institutional control of the societies that depend on it. Achieving this requires strategic datasets to be governed in the public interest and shielded from extraterritorial claims or unilateral vendor control. Without commons, sovereignty over autonomous systems is fragile.

Indeed, autonomous systems in strategic industries cannot be designed, validated, or regulated without access to large, diverse, and high-quality datasets. If these datasets remain proprietary, autonomous systems become black boxes: opaque to regulators, inaccessible to local firms, and untrusted by citizens. Data commons are therefore not optional complements but mandatory infrastructure for sovereign and responsible autonomous systems.

Moreover, a responsible autonomous system can be trusted because it is transparent, auditable, and aligned with safety and ethical standards. This requires datasets that are shared, documented, and open to independent testing, bias detection, and lifecycle monitoring. Without commons, responsibility remains a promise rather than a verifiable property.

Finally, an autonomous system can only be effective if local ecosystems are able to build, deploy, and improve automation without negotiating case-by-case access to proprietary datasets. Data commons make this possible and also allow regulators to measure safety and performance continuously rather than depending solely on vendor disclosures.

WHY ENERGY INDUSTRIES SHARPEN THE STAKES

Artificial intelligence itself is becoming a significant energy consumer, which ties the future of digital innovation to energy planning and to the supply of critical minerals. The International Energy Agency projects that data center electricity demand could more than double by 2030, requiring the equivalent of several additional medium-sized countries worth of generation capacity. This raises pressing questions of grid adequacy, siting, and decarbonization that only public institutions can address.

In parallel, the supply chains for minerals such as lithium, nickel, and rare earths, essential both to clean energy and to advanced electronics, are tightening. The International Energy Agency's 2024 review shows that refining is highly concentrated in only a few countries. This creates vulnerabilities that directly affect the ability to deploy autonomous and digital technologies at scale.

Nuclear energy illustrates how data commons could shape emerging strategic projects. Small modular reactors, defined as advanced nuclear reactors with a capacity of up to about 300 megawatts per unit, are under development in France and Argentina. France is advancing the NUWARD program and Argentina is constructing the CAREM-25 prototype. These projects are significant both for low-carbon energy supply and for national technological capability. A data commons for nuclear operations would allow rigorous safety analytics, transparent performance benchmarking, and international collaboration while keeping sensitive data under strong governance.

GOVERNANCE, FUNDING, AND INCLUSION

Creating a production-grade commons is not only a technical task. It requires a governance framework that defines membership, decision rights, access rules, privacy safeguards, and procedures for redress. Sector regulators and public bodies should hold veto power over decisions that affect safety or public interest.

Economic sustainability is also crucial. National repositories like DISKOS in Norway are funded by a consortium of industry participants under legal obligations, complemented by oversight from the regulator. Similar blended models that combine public contributions and member fees tied to usage can ensure stability. Interoperability and security must be ensured through open standards, strong identity and access management, and reliable cloud infrastructure. Partnerships with global cloud providers can accelerate deployment, but contractual safeguards are necessary to guarantee portability, auditability, and jurisdictional control. Otherwise, one form of dependency is merely replaced by another.

Inclusion matters as well. Commons should provide access programs for universities, small and medium enterprises, and public research laboratories. Training and reskilling initiatives can allow local workforces to develop the competencies needed to use the data and to participate in emerging ecosystems. In this way, commons do not only redistribute access to information but also help open new opportunities for employment and capability building.

POLICY PATHWAYS

Polymakers and industry leaders have several tools at their disposal. They can require access to machine-generated data under fair conditions, as the European Union has already legislated. They can create sectoral commons with statutory backing, starting in high-impact domains such as energy exploration and grid operations.

Further, they can attach data-sharing obligations to public funding, concessions, or exclusive rights. They can invest in trusted computing infrastructure co-located with the commons, with strict guarantees of portability. Most importantly, they can use commons as the evidence base for assessing autonomous systems under three dimensions: whether they are responsible, whether they remain under sovereign control, and whether they allow for safe and effective autonomy with accountable human oversight.

THE CHOICE

Either societies design data commons that broaden access, anchor public oversight, and enable sovereign and responsible autonomous systems, or they allow a small number of corporations, based in a few countries, to define how critical infrastructures operate. The empirical record already shows that the commons model can work at scale, in petroleum, electricity, and agriculture. The legal frameworks already exist to require fair access to machine-generated data. What remains is to apply these principles to the sectors where the stakes are highest. ///



KEY TAKEAWAYS

- Data Concentration Creates Power Asymmetries** – A few cloud providers and industrial equipment manufacturers control the bulk of critical data and computing resources, raising questions of sovereignty, responsibility, and innovation.
- Industrial Data Often Controlled by Manufacturers** – Operators of connected machines (e.g., in mining, agriculture, or construction) frequently lack control over the data their equipment produces, though regulations like the EU Data Act are beginning to shift this balance.
- Data Commons Offer a Structural Solution** – Shared, governed datasets with clear access rules and safeguards can transform proprietary data into a public infrastructure usable by industry, regulators, researchers, and society.
- Proven Examples Across Sectors** – National or sectoral data commons already exist and deliver benefits: Norway's DISKOS (petroleum), ENTSO-E (electricity in Europe), Brazil's ANEEL platforms, and the US Ag Data Commons.
- Data Commons Enable Sovereign Autonomous Systems** – Autonomous systems require access to large, high-quality datasets. Without commons, these systems remain opaque, untrustworthy, and dependent on external vendors.
- Energy and Mineral Constraints Amplify Stakes** – AI's growing energy demand and the concentration of critical minerals create vulnerabilities for digital and autonomous systems, linking technology deployment to energy planning and supply security.
- Governance, Funding, and Inclusion Are Essential** – Effective commons need clear governance, sustainable funding models, interoperability standards, security safeguards, and programs for universities, SMEs, and local workforce development.
- Policy Tools Can Enforce Fair Access** – Policymakers can mandate data-sharing, create sectoral commons with legal backing, tie obligations to public funding, and use commons as the basis for ensuring responsible, sovereign, and safe autonomous systems.



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HOW ASIAN CULTURAL VALUES CAN HELP DEFINE CYBER-CIVILIZATION GOVERNANCE



“

Every civilisation is based on a combination of key technology, a dominant form of wealth and a specific mode of governance.



Guest academic, Professor **Jiro Kokuryo**, formerly of **Keio Business School**, Keio University, and now at **Waseda University Institute for Business and Finance**, explores

how Asian cultures could impact the governance of the cyber-civilisation and in particular, how they could work with the western way of thinking.

Related research: Kokuryo, J. An Asian perspective on the governance of cyber civilization. *Electron Markets* 32, 475–485 (2022).

If you have never seen *Tron*, *Ex Machina* or *Terminator*, where the protagonists grapple with the unethical consequences of advanced artificial intelligence, maybe it is time to before reading this very insight. Indeed, could Asian cultures and philosophies be a smart way to balance out a western vision of cyber governance?

In his research, Prof. Jiro Kokuryo tackles just that. He proposes a rethink of the governance of a 'cyber-civilisation' – the era shaped by data, platforms and artificial intelligence – by drawing on Asian philosophical traditions while seeking principles shared with Western tradition.

Faced with the growing difficulty of modern societies in reconciling the economic use of data, respect for privacy and the regulation of intelligent technologies, Kokuryo explores alternative ethical benchmarks. He highlights the notion of fiduciary responsibility as a conceptual bridge between cultures, that is, the duty of an actor – platform, institution, or company – to act in the interests of those who entrust them with assets or data.



WHAT IS FIDUCIARY RESPONSIBILITY?

Indeed, in Anglo-Saxon law, a fiduciary is someone to whom another person entrusts resources – money, information, property – with the expectation that these resources will be managed in their best interests. This principle implies loyalty, diligence and responsibility.

This framework seems relevant to the case of digital governance: when faced with platforms that centralise and exploit data, should they be seen as mere owners or as trustees required to act in the interests of users? This concept makes it possible to move beyond the opposition between property rights – the Western model – and duty of loyalty – the Asian model – by linking them around the concept of trust.

BETWEEN INDIVIDUALISM AND RELATIONAL ETHICS: A SHIFT IN REFERENCE POINTS

One of the major contributions from Prof. Kokuryo's research is to propose a framework for understanding contemporary tensions surrounding data based on two ethical approaches. On the one hand, modern individualism, heir to the philosophy of the Enlightenment, conceives of privacy and data as individual property, the use of which must be subject to explicit consent. On the other hand, relational ethics – found in certain Asian traditions but also in Western schools of thought such as fiduciary responsibility – emphasises loyalty, trust and respect for interpersonal relationships. This apparent opposition, however, is not set in stone but serves to highlight different conceptions of digital governance. Indeed, it structures the argument without being absolutist, with Prof. Kokuryo advocating a hybridisation of models rather than a substitution.

TOWARDS THE HYBRID: THREE KEY QUESTIONS

The above-mentioned approaches beg a number of key questions. First, is an ethical tradition oriented towards loyalty and the collective better suited to the regulation of digital technologies? While Western societies protect privacy as an individual right, some East Asian societies accept collective data management provided that trust is not betrayed. Moreover, the cultural acceptance of technical objects as autonomous – rooted in animistic beliefs – reduces the fear of machine domination, facilitating their integration into society.

A second key question is that of how today's economic logic of digital technology is undermining the model of the individual owner. In the digital age, asserts Prof. Kokuryo, the foundations of capitalism are being transformed by three revolutions: network effects, the near-free nature of digital goods, and the end of mass anonymity. Network effects increase the value of a service as its use spreads, transforming data into resources that become more valuable the more they are shared.

At the same time, the near-zero marginal cost of reproducing digital services is destabilising economic models based on scarcity. Intellectual property, a pillar of the industrial economy, is losing ground to subscription, access and licensing models. Finally, the rise of tracking technologies is removing the anonymity of exchanges. In this light, trust and reputation are becoming the new values in digital ecosystems based on personalisation.

Finally, what forms of governance are needed for a digital civilisation? Every civilisation is based on a combination of key technology, a dominant form of wealth and a specific mode of governance. For example, the agrarian era was organised around metals as the structuring technology, food stocks as the main form of wealth, and kingdoms as institutions of governance. The industrial era, on the other hand, was based on energy, monetary accumulation and market mechanisms.

Prof. Kokuryo asserts that the digital era also has its own distinctive features. Digital technology is its foundation, trust is its main form of wealth, and regulated communities – often embodied by platforms – are its vehicles of governance. In this configuration, raw data is no longer a strategic asset in itself; only its circulation within a framework perceived as legitimate and reliable can generate value. Consequently, an actor's ability to inspire trust determines its ability to aggregate, process and leverage information flows on a large scale.

THE CONCEPT OF THE 'POTLUCK ECONOMY': TRUST AND RECIPROCITY AS THE FOUNDATION FOR VALUE CREATION

Jiro Kokuryo proposes a governance model inspired by sharing communities: individuals make their resources – that is, data, objects, skills – available when they are not using them; the community recognises and rewards these contributions through traceability – for example, self-sharing systems. As such, value therefore depends on reputation, loyalty and perceived integrity.

Moreover, Asian culture provides several ethical contributions that help shape the above. **Confucianism**, for example, prioritises loyalty to family and loved ones. And in a broader context, this justifies collective data management in the interests of the group. The revival of traceability encourages this return to a logic of relational responsibility. Further, **Buddhism** encourages detachment from possessions and kindness towards others, including strangers. This may well form the basis for an ethic of selfless data sharing, provided that dignity is preserved. Previously mentioned, **Animism** constitutes a third shaping element, considering humans to be part of nature, not its pinnacle. This facilitates the acceptance of machines as partners or allies.

HOW CAN WEST AND EAST SETTLE A NEW WAY OF GOVERNANCE TOGETHER?

Towards shared responsibility governance, the Western legal framework is based on responsibility being clearly attributed to an individual or entity. However, as self-learning systems blur this chain of causality, other avenues must be explored. These could include prioritising the collective responsibility of platforms as trustees, viewing accidents not as mistakes but as systemic events, and restricting the autonomous use of sensitive technologies such as those used for weapons or healthcare innovation.

Prof. Kokuryo does not take sides but suggests drawing inspiration from a logic of respectful coexistence between humans, nature and technologies based on trust. This moves things away from opposing the two predominant – and different – approaches to data legislation: the European and American. On the one hand, the European approach, as illustrated in the GDPR, Digital Services Act and Digital Markets Act, seeks to protect users.

On the other, the American mercantilist approach favours plurality of actors in order to protect business – which amounts to an antitrust logic. Kokuryo proposes a middle ground, encouraging platforms to act in the interests of those who entrust them with data. Indeed, this latter approach, which combines the ethics of responsibility and loyalty, could provide a basis for international convergence.

In the face of profound digital change, Prof. Kokuryo invites us to shift our thinking. It is no longer just individual rights or property that establish the legitimacy of systems, but their ability to be trustworthy. By drawing on Asian references without essentialising them, and linking them to universal principles such as fiduciary responsibility, he paves the way for governance centred on relationships and reliability. This approach does not pit civilisations against each other but proposes a shared ethical framework for thinking about the digital future. ///

KEY TAKEAWAYS

- ❑ Prof. Kokuryo introduces fiduciary responsibility – acting in the interest of those who entrust data – as a conceptual bridge between Western property rights and Eastern relational ethics.
- ❑ Rather than replacing Western individualism, Kokuryo advocates for a hybrid model incorporating Asian values like trust, loyalty, and relational responsibility into digital governance.
- ❑ Network effects, free replication of digital goods, and the end of anonymity disrupt classical capitalist models based on individual ownership and scarcity, shifting the focus to trust and reputation.
- ❑ Governance should evolve toward a system where data and digital resources are shared voluntarily within trusted communities, and value is created through traceability, reciprocity, and integrity.
- ❑ Asian Philosophical Contributions are: Confucianism: Loyalty to group justifies collective data use. Buddhism: Detachment and kindness support selfless data sharing. Animism: Acceptance of machines as social agents helps integrate AI.
- ❑ Prof. Kokuryo suggests an international framework grounded in collective platform responsibility, system-level accountability, and restricted use of sensitive technologies – offering a middle path between European regulation and American market logic.

DRIVING INNOVATION DURING RECESSION

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Recessions are periods of ‘creative destruction’ that drive the emergence of new technological paths.



Profs. **Elisa Operti, ESSEC Business School**, and **Amit Kumar, Warwick Business School**, put the research lens on innovation during recession to understand which factors truly drive momentum and impact.

Related research: Kumar, A., & Operti, E. (2025). Recessions, institutions, and regional exploration. *Research Policy*, 54(2), 105189.

When stagnation is hot on our heels and the choice is between diving in or being eaten alive, the choice for institutions is not always obvious. According to the economist Schumpeter, the right answer is neither surrender nor flight, but rather combat. Creative combat, that is. For him, innovation stems directly from disaster. Moreover, this is what French philosopher Edgar Morin calls disorder or entropy, which stimulates the world and pushes it to evolve. In these contexts, Profs. Operti and Kumar question how this innovation can make its mark at the regional level during recessions.

A first step would be to differentiate between two types of innovation: exploitation and exploration. Exploitation refers to innovation that extends already established technological trajectories by improving or refining existing solutions (incremental innovation). Exploration, on the other hand, refers to innovation that goes beyond a region's existing knowledge base by defining new problems or seeking novel solutions in unexplored areas of technology.

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INNOVATION AND INSTITUTION: LOVE AND APPREHENSION

Existing research shows that recessions generally lead to a decline in R&D spending and the number of patents filed, due to higher capital costs, credit constraints and low expected returns. Innovation is therefore often considered procyclical. However, several authors, following Schumpeter, argue that recessions are also periods of 'creative destruction' that drive the emergence of new technological paths. Indeed, the academic Mensch observes that major crises have historically been associated with waves of fundamental innovation, with more recent research confirming that companies, faced with the failure of their established trajectories, turn to exploration.

The uncertainty effect plays a central role: in a context where exploitation prospects are limited, investing in risky but promising technologies becomes relatively more attractive. In addition, institutions play a key role in financing innovation, especially during a recession, tending to support R&D, which is neglected by private investors. As such, universities play a major role thanks to their independence, their alumni networks, their infrastructure and their endowments.

However, the key factor in financing, both during a recession and in a healthy economy, remains bank financing. Here, the distinction must be made between local and international banks, which, as we will see later, have different objectives and exposures.

PUBLIC OR PRIVATE: WHO IS THE FAIREST OF THEM ALL FOR INNOVATION?

Operti and Kumar's research —studying U.S. metropolitan statistical areas from 2002 to 2015, before and after the Financial crisis of 2008—explores and analyses four hypotheses:

- The first is that the more intense a recession is in a region, the higher the probability of observing technological exploration there: exploration is therefore countercyclical.
- The second is that this effect could be partly mediated by an increase in public R&D spending, which is expected to rise during periods of crisis to compensate for private sector reluctance.
- The third concerns university research: it is thought to be positively associated with exploration and could therefore indirectly transmit the effect of recessions.
- Finally, a fourth hypothesis concerns the banking sector: the rise of international banks in a region after a crisis should increase exploration capacity, as these institutions have diversified resources and greater risk tolerance than local banks.

The first hypothesis is confirmed by regression models. Taking the Housing Price Index as a proxy for the intensity of the crisis, Operti and Kumar's research saw that this index is negatively correlated with exploration, measured as the share of patents in technologies new to the region (MSA). Thus, the deeper the recession, the greater the number of patents in new technological fields—i.e., exploration is counter-cyclical.

Conversely, the second hypothesis is disproved. Public spending on R&D rises during a recession, but it is not directed exclusively towards exploration; in fact, the trend is to stimulate incremental innovation rather than take risks with expansion into previously untapped technology fields.

Similarly, university research is positively associated with exploration overall, but it does not increase during recessions; thus, it does not explain the effect.

As for the increased presence of international banks in a region during and after the crisis, analyses do indeed show that they a measurable —though limited—role. An increase in the local predominance of international banks during recessions partially transmits the effect of downturns onto regional exploration ($\approx 11.5\%$ of the total), indicating a modest yet statistically reliable channel.

ULTIMATELY, WHAT SHOULD WE THINK ABOUT INNOVATION DURING REGIONAL RECESSIONS?

Operti and Kumar clearly demonstrate the opportunities that lie hidden within recessions. Their main hypothesis, which sought to determine whether exploration for a region is countercyclical, was found to be valid: the deeper the recession, the more regional players engage in the search for new trajectories. This finding is consistent with Schumpeter's intuition of creative destruction and confirms, at the regional level, what other studies had observed at the firm level.

Meanwhile, thanks to its geographical diversification and ability to absorb shocks, the international banking sector becomes more present locally during crises. This structural shift in the banking landscape partly explains the increase in regional exploration: international banks help to maintain minimal access to financing, while local banks, which are more fragile, reduce their exposure. However, their role remains indirect and limited, as their cautious approach does not directly encourage them to finance exploratory risk-taking.

The study's main finding is that neither the state, despite its spending, nor universities, despite their potential, are the actors that transform a recession into a time of exploration. The momentum is driven more by private actors, particularly financial ones, which shifts the centre of gravity of exploratory innovation beyond the direct control of public authorities.

Profs. Operti and Kumar's findings have several implications. If public policies are to truly stimulate exploration during recessions, they should be designed differently than as a simple increase in R&D spending. The aim should be to design instruments specifically geared towards supporting risky and still uncertain trajectories. Similarly, strengthening the capacity of universities to maintain and develop their research during periods of economic contraction would be a lever for prolonging the positive effect of crises on exploration. As for the banking sector, its structure plays a crucial role: an environment dominated by fragile local banks limits exploration, while the presence of diversified international banks opens up space for risk-taking.

KEY TAKEAWAYS

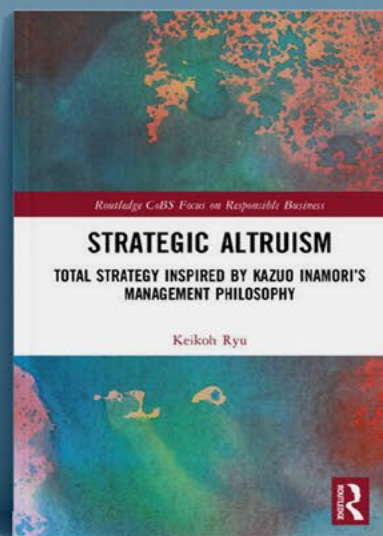
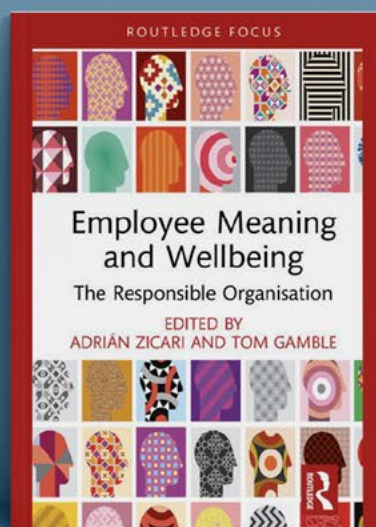
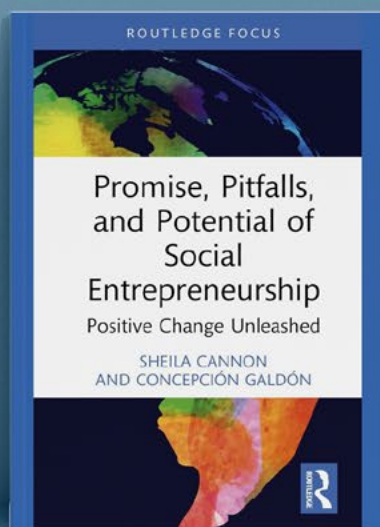
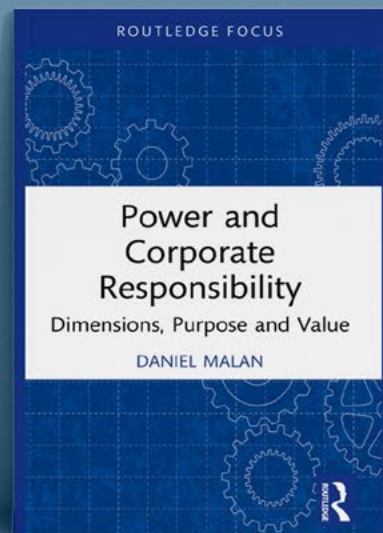
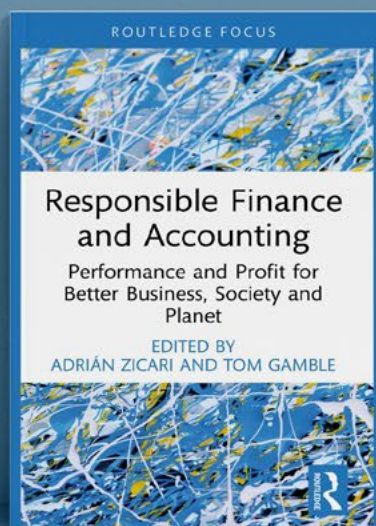
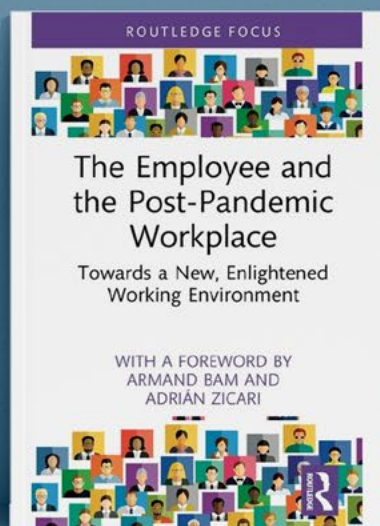
- Exploration is countercyclical – the deeper the recession, the more regional actors engage in exploration and new technological trajectories, confirming Schumpeter's theory of creative destruction.
- Public R&D spending fails to drive exploration – while governments increase R&D budgets during crises, these resources mostly support incremental innovation rather than risky, disruptive projects.
- Universities' potential remains untapped – although academic research is naturally oriented toward exploration, it does not receive extra funding in recessions and therefore cannot act as a strong mediator for exploratory innovation.
- International banks stabilize and modestly steer – their presence grows during crises and is linked to more regional exploration, partly explaining the recession-to-exploration effect—a real but limited push.
- Policy implications are clear – fostering exploration in downturns requires tailored public instruments that support risky, uncertain trajectories, stronger university funding in recessions, and a financial landscape where diversified international banks enable risk-taking.

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