

Learning Organisations:

Fonts of Beneficial Outcomes or Existential Threats[^]

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Peter Senge's vision of a learning organisation thirty-five years ago was very different from the hierarchical organisations of the time (Senge, 1990 & 2006). It has been described as a radical movement away from traditional command and control to a more liberating structure based on faith and trust (Bradbery, 2007). The reference to faith and trust may hint that seemingly appealing, profound and holistic silver bullet or single factor solutions can be harder to achieve than articulate. A focus upon one factor, contributor or variable may lead to others being overlooked or given insufficient attention. In an era when business leaders and boards face day-to-day uncertainty in relation to fundamental issues that cannot be delegated elsewhere within their organisations, they must increasingly strike balances between contending factors, such as action and reaction, activity and reflection, change and continuity, or complexity and simplicity (Coulson-Thomas, 2001). When time is short and pressures intense, who needs to learn what and when, and who will have the bandwidth and capability to absorb and apply what is learned to affect what must be done to survive and prosper?

How relevant is the initial vision of a learning organisation to challenges, risks and threats facing insecure and exposed directors and boards in the contemporary business environment in which there is continuing uncertainty about what tomorrow might bring (Senge, 1990; Coulson-Thomas, 2025a)? Do we now need quicker reacting and more empathetic problem solving and collaborative organisations? Can an organisation have too much learning, with consequences such as an overload in terms of handling, and especially prioritising, what is learned, determining next steps, and maintaining alignment. Was the learning organisation a management fad of its time, generating work for consultants, with promise that if realised might have been beneficial, or do some aspects of it have continuing resonance and traction today when existing knowledge and experience may not be relevant to novel situations, unexpected developments, unforeseen crises and unprecedented events (Wooldridge and Mickelthwaite, 1996; Coulson-Thomas, 2001 & 2025a).

A learning organisation has been described as one that encourages and enables its people to continually learn and hopefully transform itself to remain operational, competitive and achieve its objectives (Pedler et al, 1996; O'Keeffe, 2002). Whether learning organisations are a blessing, or a curse depends upon the nature of the learning that is occurring and for what purpose, its outcomes, impacts, costs and benefits, and whether it is desirable, inclusive, relevant, responsible and sustainable. Much depends upon the purpose of a company and/or the goal being sought (Handy, 2002; Joly, 2021; Mayer, 2021 & 2023; Coulson-Thomas, 2022a & 2024a). Very rarely is the purpose to learn *per se*. Any learning that occurs is often for some other purpose, such as whether to achieve an aim or to remain competitive. Although viewed as a means to an end, learning could be an activity that may generate positive externalities. The encouragement, enabling and support of learning may encourage a culture, context and setting that is conducive of innovation (Hurley and Hult, 1998). Innovation rather than learning *per se* may be needed for resilience and sustainability

(Coulson-Thomas, 2025c). Much depends upon whether, by whom, and by what means what is learned can be beneficially used and monetised, and it leads to required innovation.

Organisational Learning and Knowledge Creation

The learning organisation has been linked with organisational learning, elements of which may be either conducive of or essential for survival and an organisational learning orientation (Alerasoul et al, 2022). In turn, organisational learning has been linked with managing the search for knowledge, which may or may not be related to corporate objectives and priorities (Starkey et al, 1996). In dynamic situations in which revolutionary breakthroughs and State policy changes may also be occurring on multiple fronts, knowledge that has been acquired at great cost, may quickly become obsolete and of little value. Learning and knowledge can be about things or about how to do things. Given the speed with which situations, priorities and understanding can change and become out of date, and the greater capability that can come through the experience of doing, the latter may become relatively more important and helpful as challenges, global risks and existential threats multiply. Should the contemporary focus be on responsiveness and resilience rather than learning (Brown & Coulson-Thomas, 1989)?

Coping, adaptation and remaining relevant has been a challenge across organisations and supply chains. They and learning cannot be left to certain people and units. Its relevance is difficult to foresee. Like quality and other concepts considered desirable, it may need to embrace the whole of an organisation to generate options and possibilities. Implementation, method and practice, and turning rhetoric into reality are often the issue (Coulson-Thomas, 1992; Pedler and Aspinwall, 1995; Argyris and Schön, 1996). Action may be required in crisis situations while knowledge of an issue is still being accumulated. When challenges and events affect a total organisation, holistic and collective responses and understanding may be required, rather than the knowledge of a particular discipline or function. Organisational learning can be inhibited by departmental, functional, business unit and organisational boundaries, and facilitated by transformation to a more flexible and fluid network form of entity that can organically evolve and adapt (Coulson-Thomas, 1992; Argyris, 1999).

Organisations concerned with passing on or applying what has been developed hitherto have been described as learning organisations, recognising the need for adaptation, interpretation and updating (Murrell et al, 2009; Kools et al, 2020). Learning may occur at both system and organisational level, without being disseminated, shared and applied (Christophers et al, 2025). Awareness of it needs to be followed by understanding of its potential value and the willingness, commitment and resources to adopt and utilise it. Learning can make some people aware of what others have and result in them feeling alienated, disgruntled and excluded. It can increase awareness of what can be taken as well as earned and/or saved, increase exposure to misinformation, and enhance awareness of opportunities for antisocial and criminal activities. Law and order agencies may have to become learning organisations to keep pace with the many challenges and entities that confront them (Wathne, 2012).

Is the term learning organisation too general? Should its application be limited and become more specific, for example in relation to certain processes of knowledge acquisition and governance arrangements (Serban, 2022)? Various factors have been associated with whether a particular entity category should be regarded as a learning organisation. For example, a shared vision centred on the learning of all students, partners contributing to a school's vision, continuous learning opportunities, team learning and collaboration, a culture of

enquiry, innovation and exploration, systems for collecting and exchanging knowledge and learning, learning with and from the external environment, and modelling learning leadership have been suggested as indicators of a learning school (Kools et al, 2020). The arguments, pressures, rationale, imperative and justification for learning and pursuit of the notion of a learning organisation can change over time. Some organisations are better at sustaining momentum than others, and various tools and techniques have been suggested (Senge, 1999). The issue for many contemporary business leaders and boards is resilience and coping with current and uncharted issues, such as those resulting from disruptive US Presidential actions. They are uncertain about what, if anything, can be maintained and often feel overwhelmed.

Learning and Resilient Organisations

Organisational resilience can depend upon multiple factors, including resiliency management, business continuity and organisational learning capacity, which are related to an entity's preparedness for potential disruptions, and operational flexibility and how quickly it can reconfigure resources in changing situations (Koh et al, 2024). In dynamic and evolving contexts, organisational resilience involves going beyond recovery and bouncing back to bouncing forward and coping with changed and/or new realities, which can involve reconfiguring trajectories as different forms of disruptive events occur, including stochastic events, probabilistic transformations, and tipping points (Hernes et al, 2025). Among Chinese entrepreneurs a social mindset has been found to have a positive impact on enterprise resilience (Bai, 2025). For business leaders and boards learning to be resilient in the face of the novel and unprecedented is a challenge when relevant experience is limited.

Reducing exposure and vulnerability to the unknown can be problematic, costly when many scenarios may be possible, and often difficult to justify. Diversification and avoiding dependence or over-reliance on a few key customers and suppliers can prevent domino like cascades of failure, increase flexibility, and improve the chances of identifying potential challenges and spotting new business possibilities. Learning from experience and events, related processes of adaptation, transition and transformation, and a willingness to review and alter policies, priorities, strategies and corporate capabilities can be generally advantageous. They can enhance resilience, as might supporting stakeholders. A study of equity relationships between Chinese A-share listed companies and banks suggests common ownership between companies and banks can help firms develop in the long term and improve their resilience by alleviating financing constraints and boosting R&D investment (Wang and Lu, 2024).

Certain challenges may impact all or most members of a supply or value chain, and the extent to which they are learning organisations, and any relevant learning is aligned. How prepared and resilient they are may vary. Case studies of supply chains suggest their resilience can depend upon their ability to maintain intra-tier connections within each stage or tier and inter-tier connections between them, with disruptions lasting longer the more stages or tiers there are within a supply chain, while expanding a supplier base from one to two regions may reduce recovery time by up to 50% (Habibi, 2025). A combination of a stability-based approach, which views resilience as an outcome or return to a norm, and an adaptation-based approach, which sees it as a quality, may be required for building a strong supply chain immunity through an integration of general protection and adaptability (Ivanov, 2024).

Much depends upon the context, the type of organisation and the challenge, risk or threat an organisation must contend with. A study of 270 major cities across China suggests their climate resilience could be evaluated using an indicator system focused on exposure, vulnerability and resilience, and the influence of financial investments on urban climate resilience, with the rate of urbanisation as a moderating factor (Li et al, 2025). The various factors that lead to organisational resilience can also deliver other benefits. For example, reading the road ahead to spot emerging issues may also identify opportunities. Corporate communication networks and relationships within a company and its value chain that share information of both potential opportunities and threats before they are missed or become critical respectively, and quick and collective responses can be especially helpful. It has long been recognised that responsive organisations can be resilient and successful from multiple perspectives (Brown and Coulson-Thomas, 1989). Flexibility, redesign and reinvention to adapt to a changing situation or context are easier to describe than build, teach or learn.

Resilience and The Contexts of Contemporary Organisations

The world is changing. Annual monitoring of global risks suggests it will continue to change and that the consequences for people, organisations, communities and societies could be significant if not traumatic (WEF, 2025b & c). A global risk is defined by the World Economic Forum (WEF) as “the possibility of the occurrence of an event or condition that, if it occurs, would negatively impact a significant proportion of global GDP, population or natural resources” (WEF, 2025b). The reality of multiple and inter-related global risks and existential threats raises the questions of whether what has already been learned is still relevant and helpful or harmful in relation to what may happen, whether innovation is needed and should be risk led, responsible, sustainable and inclusive, and whether risk strategy objectives should include greater resilience, or ability to respond and cope with them, and recognise and seize the many opportunities relating to them (Coulson-Thomas, 2023b & c).

The magnitude, severity and pressing nature of many challenges also suggests that at various levels, and across multiple arenas and most locations, innovation rather than incremental change is required (Coulson-Thomas, 2025c). There may not be time for all the requirements of a learning organisation to be worked through, and any model of operation and relationships that have emerged or been created might not be relevant for what is likely to come or happen. People, organisations, communities and societies may all need to do things differently. Alternatives and substitutes are required, along with new ways of working, operating and collaborating in the face of shared risks and common threats. There may be multiple routes to desired outcomes. Business model transformation can be a route to greater organisational resilience when an adaptive path is followed, but an absorptive path and small adjustments to maintain stability can also foster organisational resilience (Grego et al, 2024).

Organisational resilience or the capacity to return to a steady condition or exceed it after a disruption can be sought by entities in sectors that may need to be scaled back or phased out such as fossil fuels as well as those where growth is required (Al Mohannadi et al, 2024). A growing global population and increased need for climate and other adaptation and mitigation, when there are natural capital, budgetary and resource constraints, means that required levels of resilience are unlikely to be achieved without innovation. The many rather than a few might have to be involved. Factors that could possibly increase resilience include

top management commitment, a culture conducive to speaking up, learning from disruptions and mistakes, awareness, being prepared and flexibility (Al Mohannadi et al, 2024).

Learning can require time that may not be available. Innovation and action are needed now (Guterres, 2024; WEF, 2025b). When risks crystalise and crises and disasters occur, it may be too late to learn or relearn, prepare, pre-empt and prevent catastrophic damage. A pre-shock strategy of product introductions and innovation may enhance stability and flexibility and provide some insurance against disruption and increase resilience (Engelen et al, 2024). The nature and scale of what must be done requires authoritative prioritisation and holistic and responsible strategies that need board involvement, approval and oversight. This article examines the relevance of the notion of a learning organisation to contemporary challenges, global risks and existential threats (Senge, 1990 & 2006; WEF, 2025a & b). It also suggests current issues that business leaders, directors and boards might wish to address, raises questions they may want to consider or ask, and highlights the risk of learning, knowledge and innovation being also used by bad actors for antisocial and malevolent purposes.

When thinking about the relevance of articles, reports and books cited for a particular board, the study situation and context, and where, when and from whom data was collected should be considered. Many academic studies are focused upon a tightly defined and researchable problem from the relatively narrow perspective of a particular discipline, rather than the wider and more holistic perspective of a board concerned with issues that may influence or impact many corporate activities and operations. A link or association may not indicate cause and effect, and findings might be impacted by confirmation bias (Edmans, 2024). Critical thinking is required for learning and responsible leadership (Coulson-Thomas, 2022b). Directors should consider the relevance and applicability of study findings, advice received, and questions posed for their companies, and for the contexts and issues that concern them.

Future-proofing a Business in a Challenging World

As initially articulated, the concept of a learning organisation could be described as a route to the future proofing of a company (Senge, 1990; Pedler, et al, 1996). Today's world is more challenging. It is difficult for a contemporary business to be excellent and innovative without being resilient and sustainable. The 2025 annual Global Risks Report of the World Economic Forum (WEF) "reveals an increasingly fractured global landscape, where escalating geopolitical, environmental, societal and technological challenges threaten stability and progress" (WEF, 2025b). People, organisations and governments face a combination of inter-related challenges, global risks and existential threats (WEF, 2025b & c). Most of them are ill-prepared to cope, especially if a combination of them occurs simultaneously, and many of them are also feeling increasingly insecure and vulnerable (Coulson-Thomas, 2025b).

According to the WEF the outlook for environmental risks over the next decade is alarming, with the top four global risks in terms of severity of impact all being environmental (WEF, 2025b). Global warming continues, and in response we are collectively not doing enough (Guterres, 2024; MET, 2025). 2024 has been confirmed by international scientific agencies as the warmest year on record (Bardan, 2025; Copernicus, 2025: WMO, 2025). It was also the first year with an average temperature clearly exceeding 1.5°C above the pre-industrial level, the threshold set by the Paris Agreement to significantly reduce the risks and impacts of climate change (Copernicus, 2025). The consequences of rising temperatures range from higher excess deaths and sea levels to more frequent and severe extreme weather events.

Hitherto, collective human responses have been too little, too late. Levels of carbon dioxide (CO₂) in the atmosphere have continued to rise at a rate incompatible with Paris Agreement targets (Betts et al, 2025; MET, 2025). Biodiversity loss and habitat degradation continues, and tipping points approach after which changes and trends become irreversible (WWF, 2024). The Arctic tundra has recently been emitting more carbon than it stores (NOAA, 2024). The UN has warned that the unprecedented speed of glacier melting is threatening food and water supplies to two billion people (UN, 2025). Learning about such threats will not lead to corporate action when boards feel they cannot affect an outcome or justify trying. The first ice free day in the Arctic Ocean could occur before the end of the decade, with the loss of reflective sea ice greatly speeding up global warming (Heuzé and Jahn, 2024). Given widespread company and country growth ambitions, and the persistence of negative externalities, it will not be possible to future-proof a business without innovation.

Systems thinking, an element of the initial learning organisation vision, collaboration and collective responses are increasingly required to address shared and complex challenges such as climate change (Senge, 1990; Ferry et al, 2024). Board strategies for building future-proof businesses need to be sustainable. Technological and digital developments can increase competition for limited resources. In some cases, they cause an exponential increase in the demand for energy. Some innovative offerings can be used for both beneficial and malicious purposes. How might boards ensure that innovations and offerings which they champion and/or support, are not misused? Is innovation required in how they engage and communicate with customers and other stakeholders? Could the adoption and use of AI and sustainability brand activism in line with UN sustainable development goals help to future-proof a business, including family businesses (Doe and Hinson, 2024)?

Leadership Dynamics for an Uncertain Era

New demands are being placed upon boards in an already challenging world. In a period when from one day to the next there may be uncertainty about what US President Trump might do and how others may respond, corporate leaders have a multitude of threats to contend with and decisions involving timescales ranging from immediate to long-term. When exogenous shocks disrupt how key players manage their time, how they react to temporal disruptions of various types and duration, and whether their temporal resilience responses involve adjusting, absorbing, or adopting, will influence how they adapt in terms of temporal resilience (Pérez-Nordtvedt and Harrison, 2024). If business leaders and boards cannot learn from relevant expertise that is limited or does not exist, they must increasingly learn from each other and engage with key stakeholders. From a governance perspective there are critical conversations that they may need to have (Bishop and Camm, 2013).

The inter-relationship of contemporary challenges, issues, risks and threats, interdependence of entities within supply and value change, and growing complexity of economic and other systems has increased interest in the leadership dynamics of systems change and fundamental processes of change within structures, processes, and relationships (Ferry et al, 2024). It has also changed the qualities being sought in directors, CEOs and C-suite executives to better reflect contemporary uncertainty, insecurity, vulnerability and dilemmas, and the need for collaboration and collective responses to shared challenges. Individual personality has been identified as important in the selection of senior executives in multinational companies (MNCs) for international assignments (Liu, 2024). Openness to possibilities is required.

Perceptions of effective leadership can arise from differing perspectives such as power, the people involved, approaches to and styles of management and factors specific to an organisation and/or context (Samad and Muchiri, 2024). Where there may be agreement is that a fundamental geopolitical realignment may be occurring that will have political and strategic consequences for many people and organisations (Black, 2024). Revisionist powers are threatening and challenging an existing world order (Sanger, 2024; Sciutto, 2024). They represent a growing challenge and potential existential threat to democracy and capitalism (Black, 2024; Coulson-Thomas, 2025a & b). How should leaders and boards navigate geopolitical risks in their decision making, and anticipate possible changes in international relations? Are they at risk of being overwhelmed? What qualities do they require to confront existential threats and how might these best be developed (Coulson-Thomas, 2024c)?

Avoidance of Learning, Irrationality and Withdrawal

Did the initial concept of the learning organisation over-estimate rationality and desire to learn (Senge, 1990 & 2006)? While evidence of negative externalities, global warming and climate change, damage and harm to the environment seems overwhelming, and may correspond with common sense and our experience, why is it often denied, rejected and ignored? Why do so many people still seem so determined avoid knowing about things that might be inconvenient, uncomfortable or challenging and opt for ignorance rather than understanding (Gore, 2006; Lilla, 2024)? Do they derive some comfort in avoidance and not knowing? Are they expedient rather than responsible, and trying to keep in with power and potential patronage? Corporate policies have been reversed following the election of Donald Trump, a climate change denier, as US President. Why are tough questions not being asked and sections of societies ignoring realities, believing lies, misinformation and propaganda, and seeking refuge in conspiracy theories, myths, religions and sanitised virtual worlds?

Foresight and preparation for various scenarios have become more important. Views differ on the extent to which democratic arrangements, entities and institutions and capitalism can cope with them and survive (Wolf, 2023; Mayer, 2024). Will the autocratic preferences and erratic policies of US President Trump undermine them? How resilient will they prove to be, given trends in trust and expectations (Edelman, 2025)? Greater geopolitical instability and rising tensions may now be influencing strategic decisions and the operating policies of most organisations (WEF, 2025b). How might changing realities, expectations and strategies affect strategic decisions, in areas from supply chains to market entry. The global expansion of supply chains makes them more vulnerable to cyber and other attacks. For many large companies supply chain challenges are their biggest obstacle to achieving cyber resilience (WEF, 2025a).

State-based armed conflict is ranked as the number one current risk by 23% of WEF survey respondents, followed by extreme weather events on 14% (WEF, 2025b & c). More companies and countries may seek greater autonomy, energy independence and self-sufficiency, strengthen their domestic industrial bases, diversify supply chains, reduce dependencies and build up supplies of critical resources such as rare earth minerals. Depending upon their situations and circumstances, what innovation and other strategies should companies and their boards adopt for leading through crises and disruptions? Are there particular approaches, methods and adaptive strategies for guiding organisations

through uncertain times, crisis communication and business continuity that might best ensure resilience and sustainability (Coulson-Thomas, 2025c)?

Recent events have suggested the emergence of a more transactional era in which more outcomes may be determined by hard power and the naked pursuit of self-interests, with old allegiances counting for little, misrepresentation and lies becoming a new norm, and values largely overlooked. Symptomatic of the new era, is push back against DEI (Diversity, Equity and Inclusion) and ESG (Environmental, Social and Governance), and the pursuit of “deals” by US President Donald Trump who may be increasingly seen as a necessary partner rather than as an ally (Garton Ash et al, 2025). There is declining belief in democracy in the US and elsewhere, with almost two-thirds of high-income countries having more support for it than the US although the relative position of the US is improving as support for democracy is falling more quickly elsewhere (State of the Nation, 2025). Leaders around the world are having to adjust to new realities and determine how best to respond.

Crisis Leadership and Learning

Around the world more resources are being devoted to military capabilities (IISS, 2025). Learning can speed up in crisis situations, periods of insecurity and during wars, even though it may slow down between them due to caution, lack of motivation or resources or imperative, and military and other public organisations may lack the commitment to learning associated with learning organisations (Senge, 1990 & 2006; Hasselbladh and Yden, 2020). When major failings occur in healthcare and other public services, the reports of investigations regularly conclude that lessons must be learned. However, repetitions and similar problems often reoccur. Are members of governing organs and senior management so preoccupied with current events that lessons from past errors and mistakes are quickly forgotten? Learning organisations should learn from their mistakes.

Without forethought and preparation, it can be difficult to foresee how different leaders might behave in a crisis. A review of crisis leadership development research, suggests recruitment, selection and training to achieve collective crisis leadership capacity encompasses switching between organisational and individual level perspectives (Nesse et al, 2024). How might more personalisation of learning be achieved? Learning lessons from crises can be complicated by their complexity and difficulty in understanding the interconnected factors that shape a crisis and the influence of various actors during a crisis (Mark, 2024). Proponents of learning organisations may underestimate the differing development needs of various activities, functions and individuals, including leaders, directors and boards (Coulson-Thomas, 2007). How might corporate learning, understanding, effectiveness and performance be enhanced by bringing more varied perspectives into the boardroom?

The nature of crisis leadership, who is involved and how it is undertaken may need to evolve during the various stages of a crisis (Wu et al, 2021). How should organisations and their boards prepare for a likely succession of crises of different types and increasing intensity that may occur simultaneously (WEF, 2025b)? What could more diverse voices contribute to resilience and sustainability in the face of global challenges? Greater diversity of perspectives and thinking in corporate boardrooms can enhance board performance and be conducive of innovation and improve governance. A focus on gender diversity can lead to insufficient attention being given to age, cultural, disability, educational, ethnic, nationality, perspective,

political, religious, social, thinking and other diversity considerations, criteria and factors conducive of innovation and improved governance (Coulson-Thomas, 2023a).

Leaders around the world are likely to be confronted by people, organisations and infrastructures impacted by the same or similar global risks and existential threats. For example, almost all people, their families, lifestyles and livelihoods will be affected in some way by climate change in the years ahead, and some will be impacted more quickly and to a greater extent than others (Lustgarten, 2024). Agreeing common knowledge, standard responses and unthinking adherence to codes and guidance, and a lack of questioning and challenge can lead to groupthink (Janis, 1972). How should boards ensure that a wider range of aspects of diversity are considered? Are there lessons to learn from other entities in emerging markets, if those from countries at a different stage of development might not be appropriate? How are potential leaders identified? Who excels at adaptability, resilience, and customer-centric approaches? How do leadership and learning styles vary across different belief systems, cultures, entities, generations, locations, nationalities or sectors?

Comparative analysis might identify approaches and styles that might better match local capabilities, conditions and constraints. Leaders across different regions of the world in countries at various stages of development face similar challenges, risks and threats. To what extent will the responses of leaders and leadership style differ according to factors such as a corporate, local, regional or national culture (Schein and Schein, 2016; Coulson-Thomas, 2024b & c; Hopkins, 2024)? Cultural awareness and social as well as emotional intelligence can be important in building the wider relationships now required (Goleman, 2007). A study of employees in Vietnamese banks has found that emotional intelligence and transformational leadership may have a beneficial impact on organisational culture, which can also have a positive effect on employee performance (Kim, 2024). Self-awareness, empathy and relationship management can lead to humane outcomes.

Digital Technology and its Governance

The learning organisation has long been inked with information systems (King, 1996). Digital technologies are actual and/or potential facilitators of learning and knowledge diversity within boards can also enable IT value generation (Matta et al, 2024). Current and emerging technologies and infrastructure are now key enablers of the digital economy (Patwa et al, 2025). Many exaggerated claims have been made by high tech companies about generative AI and other technologies and their learning applications, while many of the dangers, risks and vulnerabilities arising from their irresponsible and malevolent use have been downplayed or are largely ignored by those who stand to benefit from their wider adoption (Marcus, 2024). How might big tech companies be held to account, and how could their activities which have profound consequences for our collective futures be better monitored, moderated and regulated?

A CEO's orientation towards digital technologies exceeding that of a firm's industry peers can enhance investor perceptions about a firm's value, and the effect can be further enhanced by board members' digital expertise and knowledge diversity and independent directors with digital expertise (Filatotchev et al, 2023). However, digital technology innovations with alluring and transformational potential can also present sustainability challenges for leaders and boards. In some cases, their misuse can represent an existential threat (DSIT, 2024).

What steps should boards take to ensure the adoption of Artificial Intelligence (AI) and the Internet of Things (IoT) is beneficial, responsible, safe and leads to inclusive growth?

An AI strategy may be desirable to ensure that required infrastructure and skills are available when needed, including data centres with access to the power and water they require, sustainability and security risks are mitigated, and capacity is allocated to priority requirements, whether from a corporate or national perspective (Clifford, 2025). Coping with an exponential expansion of sources of data of varying quality is a major challenge to the concept of a learning organisation and the quality, relevance and value of what is learned. Due to the lead times involved, an AI strategy could cover the selection and development of priority data sets, some of which may derive from the public sector, and their structure, and arrangements for access to them (Clifford, 2025). How should boards ensure its collection and use is safe and compliant with applicable laws and regulations?

Machine learning and AI generated knowledge can present multiple problems. Because of the data used to train them, applications of AI may systematically discriminate against certain characteristics and communities. A socially responsible board might need to be vigilant and actively work for AI equity rather than assume it (Lee, 2024). How can boards ensure both the challenges and opportunities of AI are considered when it is discussed? Will societies lose control of both AI and biotechnology, and how can their potential benefits be secured while at the same time preventing their misuse by malicious and bad actors (WEF, 2025b)? How might AI be used to enhance board decision-making, improve predictive analytics, and automate processes? Who should be involved and could offer objective advice?

Applications of technology should be appropriate, proportionate and justifiable in relation to benefits, costs, risks and scalability. How should boards ensure integration and scaling issues are addressed, along with others concerning data privacy, biases, and decision-making transparency? In the digital age there are multiple corporate assets to protect. How might a board and governance arrangements provide cybersecurity oversight and ensure protection of sensitive information, intellectual property, and brand reputation? High tech innovations can be marketed as a potential panacea. They may also cause others to relax and continue activities that generate negative externalities and exacerbate their undesirable environmental impacts. AI can be used to both protect against cyber-attacks and undertake them, and small firms including those within supply chains can be especially vulnerable (WEF, 2025a).

Addressing the Challenges of Digital Technologies

Proposals for new initiatives or investments often stress internal and short-term benefits for those considering them, while underplaying or ignoring adverse and longer-term consequences for others. Is learning considered or overlooked? Innovation played as a 'get out of jail card' that might benefit its proponents, producers, owners and elite beneficiaries sometimes also imposes burdens upon the excluded and marginalised (Acemoglu and Johnson, 2023). What options are available for making digital technologies available to those who operate where local infrastructures cannot adequately support them? The decline of social interaction through traditional play and lives dominated by social networking is resulting in isolation, loneliness and an anxious generation (Haidt, 2024). What can and should organisations do to avoid alienation, become more inclusive and help people to reconnect with each other and the natural world?

Cyber incidents, and especially IT disruptions, are regarded as the top business risk by respondents to Alliance's 2025 Risk Barometer survey (Alliance, 2025). As cyberspace becomes more complex, cyber inequity and the gap between those able and unable to properly prepare and defend themselves against cyber-attacks increases (WEF, 2025a). Cybersecurity frameworks should ensure business resilience. A comprehensive cyber resilience framework incorporates risk assessment, incident response planning, ongoing training, and governance aspects, and embraces action at monitoring, response and recovery stages (Kumar Jain et al, 2024). Where and when are companies most vulnerable to cyber-attack and when were cyber defences and responses last systematically tested?

Intelligent choice architectures that use generative and predictive AI to create, prioritize, and present options are reshaping decision-making in some organizations and creating governance challenges (Kiron and Schrage, 2024). Who should have the authority to allocate rights, establish accountabilities and manage interactions in 'choice environments' where human judgment and AI intersect, to enable superior choices to emerge through the interplay of machine intelligence and human judgment (Schrage and Kiron, 2025)? How can directors ensure assurance and responsible control in areas which they do not themselves understand? Who is equipped to establish boundaries and limits to what is considered responsible?

Innovation is enabling rapid progress across a range of technologies, that is outpacing the review of regulatory and governance efforts to control them and deal with issues arising on account of their adoption and scaling. How should boards prepare for disruption, gaps and uncertainty? In the interim, what oversight should they provide and what strategies should they adopt in relation to emerging technologies and their potential impact on business operations and governance? Where should they be courageous or cautious? What strategies should boards adopt to stay ahead of technological trends, adapt to new technological changes and maintain a competitive edge? How might these be affected by economic uncertainty and consequences of the 2024 US presidential election (IOD, 2025)?

Economic Trends and Board Strategies

Uncertainty over possible US tariff and other policy changes during a Trump presidency, and the possible reactions of other states to them, complicate the economic outlook for many boards (IOD, 2025). At the time of writing, US tariffs and responses to them remain uncertain. The International Monetary Fund (IMF) is anticipating that global uncertainties, including those relating to US tariff policies, will lead to lower growth and inflationary pressures in many countries around the world (IMF, 2025). To what extent might pressures for imposing tariffs be moderated by their impact on domestic inflation? Other global risks and existential threats will also impact economic trends. Because of global warming, by the end of the century six billion people will reside outside areas in which people have hitherto chosen to live (Lustgarten, 2024). A proportion of them may migrate to more inhabitable locations. This will have social and economic impacts in areas migrants are leaving and their destination locations. It will also require expenditures on new housing and infrastructures.

Monitoring, assessment, learning and understanding priorities should reach beyond challenges, risks and threats. Boards should ensure appropriate business opportunities are being identified, prioritised and scoped rather than ignored. For example, as areas run out of water and sea levels and temperatures rise, large numbers of people may choose to migrate, or are expected to be forced to migrate. People and organisations should check if insurance,

welfare and other forms of support are linked to their place of abode and/or work or to them if they were forced to move because of a consequence of climate change, whether a forest fire, flood, or local extreme weather event (Williamson and Chen, 2025). What can directors do to ensure that companies secure early mover advantages and are not left with stranded assets? The costs of inaction and delay and crawl-out costs can rise at an exponential rate.

Global warming and climate change will have other economic consequences, whether for energy transition or for coping with extreme weather events. Economic losses from natural disaster events driven by Hurricanes Milton and Helene in the U.S. and flooding across Europe reached \$368 billion in 2024 (Aon, 2025). Donald Trump's re-election as US president, geopolitical tensions, global economic challenges, climate change, trade wars, AI advancements, cybersecurity, and organisational culture have all been identified as 'big issues' for corporate boards during the current year (IOD, 2025). How should companies tailor their strategies to thrive in global markets, including local market adaptations, risk management, new forms of international competition and looming trade wars?

Around the globe in different countries some aspects of the new era are becoming clearer as events unfold. Foresight, anticipation and flexibility should influence learning priorities. There is likely to be increasing rivalry for scarce resources. Significant environmental damage can be caused by the search for critical and rare minerals required by electronic devices, electric vehicles and solar panels (Beiser, 2024; Scheyder, 2024). Rainforests are being destroyed, rivers polluted, and children exploited. Opinions on how to respond can vary within stakeholder groups and across generations (Edelman, 2025). More communities and societies appear to be fragmenting into factions that may each have an increasingly distinctive view of reality. Almost two-thirds (64%) of GRPS respondents believe that "we will face a Multipolar or fragmented order, in which middle and great powers contest, set and enforce regional rules and norms" (WEF, 2025b). Business contexts are also fragmenting.

Skills for Complexity, Recovery and Entrepreneurship

Learning how to better cope with increasing complexity and related dilemmas would be beneficial. Legal and regulatory complexity can impose significant costs on business, that convergence, more thoughtful drafting and greater scope for discretion might address (de Lucio and Mora-Sanguinetti, 2022; Gavrilović Janković and Nikolić, 2024; Lam, 2025). Effective strategies for dealing with regulatory complexities across borders are needed. How might this be achieved with the added complication of differing tariff regimes, and how can boards both ensure compliance and maximise global market potential? Green and sustainable growth cannot be assumed. Business strategies, public and other nudges, and economic incentives should align with human behaviour to foster environmentally friendly actions among individuals and businesses (Gizyatova et al, 2024). How should boards tackle negative externalities, ensure growth is green, resilient and sustainable, and identify sectors that are poised for innovation and growth, post-COVID-19?

Opportunities for responsible and sustainable growth will reflect government action as well as innovation and corporate competitiveness. Public policy can affect recovery following a crisis such as COVID-19. It might be mistaken and may have a varying impact according to jurisdiction and sector (Coutino, 2023). What insights on strategic planning for coping and recovery might enhance resilience and agility in the face of ongoing economic challenges and increasing costs of supporting those adversely affected by transition, transformation, scaling

down environmentally damaging activities and new technologies? Requirements for overseas humanitarian support, energy transition and reducing inequality are likely to compete with desires for greater domestic self-sufficiency, investments in armaments and strengthening a national industrial base (WEF, 2025b). What might such dilemmas mean for learning and corporate social and environmental responsibility strategies, policies and priorities?

The extent to which global risks can be tackled by research and development, innovation, national and local regulations, development assistance, financial instruments, corporate strategies and multi-stakeholder engagement can vary (WEF, 2025b). Those considered by WEF GRPS responses to be most susceptible to corporate strategies are talent and/or labour shortages, disruptions to a systemically important supply chain, lack of economic opportunity or unemployment, asset bubble bursts, economic downturn (recession, stagnation), inflation, inequality (wealth, income), pollution (air, soil, water, etc.), disruptions to critical infrastructure, and debt (public, corporate, household) (WEF, 2025c). Some boards may find it easier than others to influence these risks and prepare for them.

Securing relevant talent is more important than knowledge per se for many CEOs. Boards need to ensure that companies have the skills they need to cope with the challenges, global risks and existential threats that confront them (IOD, 2025). What skills are required for innovation, greater resilience and entrepreneurial thinking? How might they best be built? Some board members become stale, settled and/or complacent. They cease to be curious or to enquire, explore and learn. They dampen spirits and stifle initiatives. The mindsets of directors can benefit from education or experiences that give rise to a lifelong commitment to discovery, creativity, learning, mentorship, teamwork, and striving (Porterfield, 2024). What global training and development programmes and strategies are needed to confront current challenges, risks and existential threats and innovation, enterprise and entrepreneurship?

Governance Arrangements in a Fragmenting Context

Global governance arrangements are a challenge in an era in which international collaboration to achieve collective responses to global risks and existential threats is becoming more problematic. Different parties whose cooperation may be required to ensure our collective survival, and their various stakeholders may employ diverse learning and other practices, policies and priorities that might not be well aligned, and the learning that survival requires may be collective and/or systemic in a context beset with polarisation, fragmentation and division (WEF, 2025b). Learning that may provide some balance and perspective could be insights from history concerning how past communities and civilisations have sometimes coped with various catastrophes, including societies that have been riven with religious and other conflicts and divisions (Wade, 2025). As parties step away from multilateral arrangements and find themselves facing short-term pressures, bilateral negotiation with transactional outcomes can take priority over cooperation and collective responses.

As faith in multilateralism declines, the UN Security Council continues to be divided, and military buildups occur, more countries may be inclined to undertake unilateral action, increasing the risk of instability, armed conflict, tighter controls on citizens and greater internal surveillance (WEF, 2025b & c). The assault on liberal democracy and capitalism and advance of authoritarianism may continue. Learning entities are not always benign. There are many ways in which a malignant authoritarian state can wage hybrid warfare and seek to undermine neighbouring democracies (Moody, 2025). How might companies be affected and

what could this mean for what is regarded as appropriate conduct and responses? Could 'horses for courses' learning and other strategies be implemented?

A study of companies in the Spanish Continuous Market suggests the larger a company is, the better the mechanisms may be for providing an optimal degree of governance in the oil, energy and technology sectors (Corral-Lage et al, 2024). Might this be the case for companies in general, but more challenging for smaller enterprises in the face of geopolitical division? Some entities and certain jurisdictions may be more at risk than others. Misrepresentation, misinformation, disinformation, fake news and deepfakes can undermine trust in both governance and leadership at various levels (van der Linden, 2023; WEF, 2025b & c). They can be used by dictators and authoritarian rulers to discredit and undermine other more open regimes, while they employ surveillance technologies to maintain order at home. How should boards and organisations deal with them (Coulson-Thomas, 2024d)?

A standard approach to governance may not be appropriate in all jurisdictions and might have implications for relations with stakeholders as situations change over time or seismic events occur. What is regarded as effective governance may depend upon the arena of governance, perspective, country or sector. Enterprise data governance may need to be accompanied by a systems approach to management to support AI capability (Luna-Reyes and Harrison, 2023). Might directors with a certain level of control be more ready to change their policies and priorities to accommodate where power lies and feel less obligation towards investors with little or lower influence? The higher the number of proprietary directors the lower the levels of good governance in Spain's basic materials, industrial, construction and consumer goods sectors and services companies (Corral-Lage et al, 2024). A dictatorial regime might interfere with governance arrangements, replace a board or require it and other companies to serve the interests of the state. It may constrain what is taught and learned by whom and where.

Operationalising Learning Organisations

In addition to other risks and existential threats, greater geopolitical instability and rising tensions may now be influencing both strategic decisions and the operating policies of most organisations (WEF, 2025b & c). Improvements in performance, responses and outcomes in multiple areas might now need to be sought. What is learned, how it is learned, by whom and for what purpose may need to change. The top five risks for Indian executives in the WEFs Executive Opinion Survey administered between April and August 2024 are water supply shortage, misinformation and disinformation, the erosion of human rights and/or civic freedoms, pollution (air, water, soil) and labour and/or talent shortage (WEF, 2025c). How might these be tackled and resilience and responsible innovation enabled through a relevant governance framework? How can creative board leadership enhance enterprise learning?

It has been recognised that tools and techniques as well as strategies may be required to build a learning organisation (Senge, 1994). More recently behavioural factors such as desire, motivation and necessity have become more important in the face of multiple challenges and threats. What frameworks for business excellence, global standards and best practices might be relevant for addressing certain areas, sets and/or categories of challenge, risk or existential threat? For example, The Kunming-Montreal Global Biodiversity Framework (GBF), ratified in December 2022, established an international mandate to protect and restore biodiversity, including 23 actionable targets for 2030. Where and when might a recognised model like that of EFQM and/or the Baldrige Criteria still be helpful, and where is innovation required? In

government-dominated industries, where firms rely on public subsidies, guarantees, or demand, is a different governance model needed (Kovvali and Macey, 2025)?

Required activities can involve unwelcome costs. While necessary, recycling can be energy intensive and polluting (Beiser, 2024). What role could different and revised approaches play in governance, risk, management and compliance for resilience and sustainability? One needs to be environmentally and socially responsible even when doing the right thing. We need to rethink common and required activities such as transportation and create more responsible and sustainable solutions (Beiser, 2024). Values, corporate purpose and priorities may also need to be revisited (Mayer, 2021). What might help to restore trust in business? For example, should ESG and sustainability concerns extend to tax governance and the payment of a fair rate of tax proportionate to turnover and activity (Gribnau, 2024). What role should both culture and strategy play as business transformational enablers in areas such as resilience and sustainability? Where is a greater priority and urgent action most required?

Organisations and professional associations may face a growing divide in the ordering of risks and views of older and younger members. For example, younger WEF GRPS survey respondents are more concerned about global environmental risks over the next 10 years than older age groups, and noticeably more so in the case of pollution (WEF, 2025c). This is not surprising as their lives could be much more adversely affected by multiple and inter-related environmental factors. They may also have different learning preferences and priorities. What represents superior governance in the handling of dilemmas and the bridging of emerging divides? How might one build on certain values or modify the stakeholder paradigm? A study of Croatia companies has found a direct positive relationship between the level of corporate governance quality and the degree of entrepreneurial orientation (Obuljen et al, 2024). What governance changes would better support innovation?

Ensuring Sustainable Outcomes

The learning company has also been linked with sustainable development (Pedler et al, 1996). How should boards ensure that corporate activities, operations, strategies, approaches and tools for continuous improvement, competitiveness, transition and transformation, and quality, relevance and affordability assurance are appropriate, responsible and sustainable? Are boards ensuring that management focuses on critical key performance indicators (KPIs) and metrics for core activities for competitive advantage such as manufacturing excellence (Sikder, 2024)? The board's focus should increasingly be on global risks and existential threats, and fundamental shifts that are occurring (WEF, 2025b; Coulson-Thomas, 2025a). Insured natural disaster event loss in 2024 was \$145 billion, with some 60% of the economic losses from natural disasters during the year being uninsured (Aon, 2025). Should governance monitoring specifically check on losses that were uninsured, investigate if affordable options were available, and consider whether and what changes of practice might be required?

Will people and organisations rise to the many challenges, global risks and existential threats we collectively face? In his new year message for 2025 and after a decade in which the ten hottest years on record have happened, the UN Secretary General has called for countries to drastically slash emissions of greenhouse gasses (Guterres, 2024). What can boards do to ensure those for whom they are responsible better understand the causes and common features of current global risks and existential threats, requirements for effective responses, possible obstacles to them and how these might be overcome (Coulson-Thomas, 2024a)?

How should boards address the consequences of a continuing collective failure to do enough to mitigate them, which could be catastrophic and result in a breakdown of law and order?

Overall opinion is pessimistic, with those contacted by the WEF doubting that our societies and institutions will be able to cope with the challenges, global risks and existential threats confronting humanity and the natural world (WEF, 2025c). How many current directors will stay the course or bail out before becoming overwhelmed? Governance arrangements are required for a variety of cooperative and collaborative relationships between different entities in multiple jurisdictions, and collective responses to common and shared challenges, risks and threats. Participating company boards must ensure that initiative discussions, meetings and workshops at various stages of these relationships are compliant with anti-trust, competition and other applicable laws. The challenge for boards is great and increasing.

Leadership for Survival and Innovation

The prospects of mankind appear dire, given US President Trump's belief that climate change is a hoax, his withdrawal from the Paris Agreement and pledge to "drill baby drill" for fossil fuels. There is pushback against sustainability and certain oil majors are reigning back their 'green' investments in renewables and ramping up oil and gas production (Jack, 2025). The science is consistent. Glaciers are melting faster than ever recorded under the impact of climate change according to an authoritative and comprehensive collaborative scientific study (The GLaMBIE Team, 2025). How might directors ensure more attention is paid to worse case estimates that may now be more likely to occur? What steps can corporate boards take to exercise influence when there may be fewer seats at tables where key decisions are taken, and many others are dropping previous policies and priorities to keep in with new centres of power? What can they do to hold an entity together and prevent melt-down or exclusion?

Biosecurity, cyber-security and global warming remain pressing issues. The spread of H5N1 from poultry to cattle and subsequently humans in the US illustrates the continuing risk of pandemics (Wu, 2025). Government and public services and infrastructures upon which companies depend can be especially vulnerable to cyber-attack because of budgetary constraints, a lack of staff with cyber-security skills and outdated IT systems (NAO, 2025). Criminal enterprises, malevolent actors and international disputes flourish. AI is weaponized. Nuclear arsenals are being modernised and renewed (Kristensen, 2025). Bodies such as the US Nuclear Regulatory Commission can be subject to a Presidential Executive Order. Are we heading for a world of continuous chaos and instability, successive and multiple crises, and looming or inevitable cataclysm (Kaplan, 2025)? What options to 'buy time' are available?

The increased risk to humanity from the existential threats of nuclear, biological, climate change and disruptive technologies during 2024 has caused the Bulletin of the Atomic Scientists (2025) to move its Doomsday Clock forward to 89 seconds to midnight. Are we at an inflection point when multiple 'paradigm shifts' and discontinuities are occurring, some of which may be irreversible (Kuhn, 1962; Motadel, 2025)? Relying upon stakeholders and responsible investors to influence boards may be problematic when action is needed now. For example, while voicing concern over continuing negative externalities might be preferred to disinvestment, in some jurisdictions there may be obstacles, issues and concerns that inhibit or limit the influence that investors can have on corporate climate strategy (Och, 2025). What can and should boards do to engage them? How might they be made more accountable?

Could greater moral ambition help people to close aspiration-achievement gaps and enable shared values to have more influence on outcomes (Bregman, 2025)? As the costs of looming risks and threats increase, if a wake-up event occurs, might mass public and stakeholder reaction trigger a sudden acceleration of efforts (Aon, 2025; Stern, 2025)? By then, will it be too late? Accelerated and targeted innovation may be a route to resilience, sustainability and survival. Are innovations focused on major problem areas, including reducing the resource and energy demands of other innovations and AI, the missing ingredient? Or will their use be unsustainable, for trivial purposes and lead to our demise? Governments may call for innovation, but they usually rely upon enterprises and their boards to bring them about.

Contemporary uncertainty and insecurity, creates opportunity for disruptors to achieve widespread impact to the detriment of many others (Coulson-Thomas, 2025a & c). Given uncertainty over short, medium and long-term impacts of Trump 2 tariff plans and international pushback against them, what learning, knowledge and innovations might help to redefine and strengthen resistance to demagoguery, narrow self-interests and attacks on the collective and common good, increase the resilience of people, organisations, communities and economies, and make significant strides towards a better future? Those looking to collaborate in industries for the future may find they are pushing against an opening door. Boards must ensure resulting innovation and collaboration have a responsible purpose.

Conclusions and Implications for Responsible leadership

Learning can depend upon teaching, delivery and support, the establishment, refinement and development of knowledge, and agreement on the knowledge that is appropriate, relevant and which should be prioritised, shared or taught, and further developed. There is much scope for disagreement. For example, in the face of biosecurity risks, while there may be agreement among experts on the need for collaboration and collective action, there can also be disagreement, such as on the value of medical counter measures when a response is urgent, the impact of AI which can be used for beneficial defence or to weaponize and for attack, the handling of information hazards, or certain pandemic paradoxes (Franz, 2025).

There is also the problem of misinformation and disinformation which might be accepted because of confirmation bias and frequent repetition (van der Linden, 1923; Edmans, 2024). Victims may be turned off, give up, or further share an alternative and mistaken form of reality. What is learned could be mistaken, misleading, harmful and/or intended to deceive or undermine. What is relevant for one function, unit, situation, location, or context might also not be appropriate elsewhere. Relevance and value may alter from one moment to the next and change more rapidly than it can be reviewed and updated. Corrections and counters might take time to develop that is not available in a fast-moving context.

Many learning organisations represent a serious and growing threat to the environment, humankind and many other life forms. Considerable efforts, assisted by talented individuals, including in many cases those with relevant professional expertise, are devoted to learning better ways to evade, cheat, kill or steal. Learning organisations strive to produce more deadly and lethal weapons, avoid or circumvent laws, regulations and sanctions, overcome cyber and other defences, conceal negative externalities, pursue self and vested interests at the expense of a wider common good, engage in a wide range of deceptive, exploitative and malevolent activities, take advantage of the vulnerabilities and weaknesses of others, and harm those considered competitors, opponents or who think differently, belong to another

group, or are disliked. In so doing, they may perfect their use of techniques ranging from misinformation and disinformation to deniable elements of hybrid warfare.

Malevolent organisations routinely misuse what they have learned. Conspiratorial networks, demagogues and authoritarian rulers re-write history and employ what they have learned to deceive, misrepresent, obtain, consolidate and retain power. Within the broad sweep of recent and contemporary history, liberal democracy appears to be in retreat. Some rethinking is required in the face of geopolitical realities (Black, 2024). Learning and other applications of AI and digital technologies are often used for trivial purposes in democratic consumer societies, and for surveillance and control in authoritarian ones.

Authoritative scientific evidence is wilfully ignored by some business leaders. Past principles and established positions are quickly abandoned for short-term advantage when a change of regime occurs to keep in with a new font of power and influence, suggesting that much contemporary leadership is shortsighted and/or not responsible (Saks, 2023). Is a more empathetic, listening, resilient and problem-solving form of leadership required, that seeks a greater diversity of objective and independent evidence, advice and opinion, avoids bandwagons, fashions and fads, exercises independent judgement and is better able to instinctively learn and confront existential threats (Coulson-Thomas, 2014 & 2024c)?

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Abstract

The concept of the learning organisation has appealed but proved difficult to realise and sustain. Eventual outcomes and impacts have often fallen short of early expectations and promise. What is learned can be ignored, misused and quickly become out-of-date. Entities struggle with contemporary challenges, global risks and existential threats. There are issues and questions for directors and boards to consider. Lessons from the past are not learned. Misinformation and disinformation abound. AI models that feed on them can mislead and in time implode. Evidence and warning signs are ignored. Responses to existential threats are inadequate. Climate change denial and authoritarian strategies reduce our survival prospects.

Key words: Learning, Learning Organisations, Directors, Boards, Existential threats, Survival

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