INNOVATING GOVERNANCE TO GOVERN INNOVATION

We are entering a time when many of the structures we inherited—public institutions, corporations, capital markets, and even our assumptions about what defines "value"—are showing signs of substantive strain. Built for stability, predictability, and incremental improvement, these systems are now straining to the breaking point in a world defined by emergence[1].

Emergent Governance® is a necessary, nascent, and emerging impact filter that focuses on **how emerging technologies can be used to shape governance** so governance can be used to shape how these technologies impact organizations and systems and to **channel them toward human thriving and environmental flourishing**. Understanding and harnessing exponential change requires innovative approaches that are agile and emergent. Emergent Governance® aims to support this imperative.

The scale and significance of this shift are visible in the data: AI power demand is projected to grow tenfold by 2030[3]; the robotics revolution has exceeded expert predictions[4]; the global population of those over 60 will double to 2.1 billion by 2050[5]; and the energy required to power AI may exceed 25% of U.S. electricity generation by decade's end[6]. Meanwhile, over one-third of citizens in OECD nations believe their governments are unlikely to appropriately regulate emerging technologies[7].

We stand at the precipice of exponential change[10]. Directors are being called upon to demonstrate governance at the corporate, institutional, systems, and societal levels with **a mindset that understands both the potential for abundance and the risk of widespread destabilization**.

Governance itself must transform—become a forward-leaning, values-anchored, sensing, learning, intelligence-enabled function, readied, connected, and capable of shaping the future. This is the potential and work of Emergent Governance®.

I. The Legacy Governance Model Is Breaking Down

Institutional Trust Is Crumbling

Trust in national institutions is declining sharply across developed democracies. OECD studies show more than 13% average decline across the EU since COVID, while representative governments face historic lows in public confidence. The 2025 Edelman Trust Barometer reveals institutional trust averaging only 50-55% in major economies, with business slightly outpacing government, NGOs, and media. Trust inequality between high-income and low-income populations is widening significantly, driven by economic grievances and political polarization[2,12]. As organizations and governments struggle to adapt to exponential change, **uncertainty and conflict are accelerating institutional decay.**

Integrated Technological Drivers, Exponential Speed

These trust dynamics are unfolding alongside an equally profound structural shift: the pace and nature of technological change has transformed the very conditions under which governance must operate[8,9,10].

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Unlike past transformations, today's change is defined by **simultaneity and convergence**: AI, robotics, climate solutions, energy systems, digital currencies, and human longevity are not advancing sequentially but intersecting exponentially. Traditional governance structures and regulatory systems—built for an era of incremental, linear change—simply cannot keep pace with today's acceleration, let alone tomorrow's.

Siloed Governance Is Insufficient

The exponential convergence of technologies is colliding with a second, equally pressing reality: **we are already in a structural deficit across the systems society depends on most.** Housing affordability, healthcare capacity, infrastructure maintenance, energy reliability, climate adaptation, and environmental stewardship are all under strain—before the next wave of technological acceleration fully arrives. This means that **gaps are widening just as demands on systems intensify.**

Addressing change through the siloed lens of a single company, government ministry, or industry sector has proven incapable of meeting this moment. Siloed governance has been too slow and has contributed directly to today's deficits across core societal functions—housing, health care, infrastructure, energy, climate, and the environment.

Evidence from community-infrastructure research and crisis-response governance consistently demonstrates that **these systems are deeply interconnected**: shocks in one domain (housing insecurity, public health strain, grid instability, climate events) quickly cascade into others[13,14].

As a result, **systems thinking—not isolated, linear response—is emerging as the essential governance capability** for enabling resilience and reducing further erosion of societal foundations.

Without integrated, systems-level governance across these domains, today's deficits will deepen, and tomorrow's exponential innovations will amplify instability rather than improve outcomes. **This is why Emergent Governance® is required—an approach capable of stewarding complexity, interdependence, and rapid change.**

Uncertainty is Certain

Uncertainty is no longer an episodic condition to be managed; it is the continuous backdrop against which boards must now lead[1,11]. This reality demands an essential mindset shift: directors must govern not only through risk, but toward opportunity. In an environment where exponential technologies, geopolitical dynamics, and societal pressures interact unpredictably, waiting for regulatory certainty is no longer prudent stewardship—it is strategic paralysis.

Innovation cannot thrive when governance is fixated solely on control and risk avoidance. Yet boards cannot defer action while waiting for regulatory clarity. The legal precedent is unequivocal: directors already have a fiduciary obligation to address material risks—including those stemming from climate change, AI, cybersecurity, and technology disruption—whether or not regulation provides explicit guidance. Courts have consistently held that fiduciary duty encompasses reasonably foreseeable risks, and AI, climate, and cybersecurity threats are demonstrably foreseeable[15,16,17].

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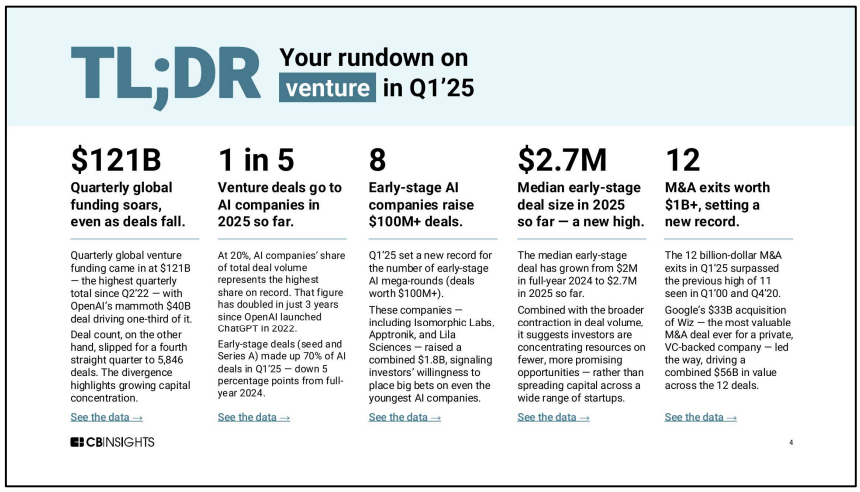
But fiduciary duty is not limited to mitigating foreseeable harms; it also requires positioning the organization to capture foreseeable opportunity. The next decade of competitiveness will be shaped not by compliance timing but by **strategic intent, investment choices, and the willingness to experiment in ambiguity**. Directors who govern only to avoid downside will miss the upside required for long-term value creation.

A fragmented regulatory landscape means that boards must now exercise imaginative, proactive stewardship—deciding how to govern AI, data, climate exposure, and technology-enabled business models long before regulators arrive. This is not optional; it is now the core work of directors. Failing to act—whether out of caution or uncertainty—exposes organizations to strategic obsolescence, competitive erosion, and potential legal liability.

Emergent Governance® therefore requires **a mindset that sees uncertainty not just as a threat to be contained, but as a frontier for reinvention and advantage.



Effectively monitoring the signals from new entrants deploying exponential technologies is an essential element of considering their impact.

Market Insights from CB Insights State of Venture Q1 2025 Report.

Capital Markets Reinforce Short-Termism—And Signal the Entrepreneurial Economy

A profound and often underestimated shift is reshaping the competitive landscape — one with direct consequences for board governance. While public markets continue to reward quarterly performance and rapid returns, a parallel innovation economy has emerged that is structured for **long-term value creation, experimentation, and reinvention**. This divergence is creating a competitive asymmetry that many public-company boards underestimate until the disruption is already material.

Public markets still prioritize short-term financial performance, rarely pricing resilience, innovation capacity, stakeholder trust, or societal impact. Directors feel this pressure directly: investor expectations measured in one- to three-month windows drive management toward defensive decision-making, shortened project cycles, and diminished risk appetite — collectively undermining the long-term fundamentals necessary for competitiveness.

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Venture capital — once the patient capital of breakthrough innovation — has absorbed some of the same short-term dynamics. Quarterly reporting cycles increasingly influence investment timing and decision-making, leading portfolio companies to optimize for immediate optics rather than durable advantage. Yet the most significant development is not the spread of short-termism into venture capital, but the **explosive rise of the entrepreneurial economy**, which is reinventing industries at startup speed.

Startups now commercialize high-impact innovations precisely because they are structurally oriented toward **risk-taking, speed, and reinvention**. CB Insights' Q3 2025 data shows AI funding alone reached $24.3 billion across 943 deals globally, with venture funding totaling $85 billion in a single quarter[18,19]. These firms are building AI-native business models, autonomous systems, digital infrastructure, and climate-tech platforms that reshape value chains before incumbents can respond.

This shift is global, not limited to Silicon Valley; national innovation banks and scale-up councils such as Canada's **BDC** and the **Council of Canadian Innovators** are channeling more patient capital and highlighting public policy changes toward industrial reinvention, expanding the entrepreneurial economy's footprint [20,21].

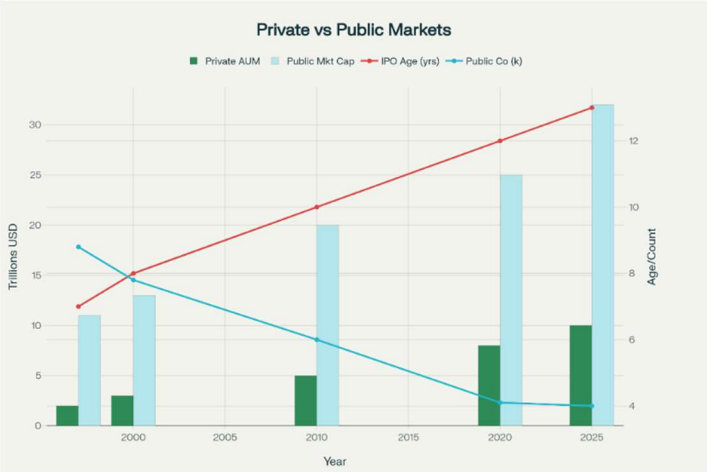
A second dynamic compounds the competitive asymmetry: **startups are staying private longer and growing larger before they ever reach public markets**. Median time-to-exit has expanded from 5–7 years to 10–12 years, giving these firms the runway to refine products, scale internationally, and build defensible competitive moats long before incumbents can see — let alone counter — the threat[22]. By the time they appear as public competitors, they are often fully formed, highly capitalized, and technologically superior.

For directors, this creates a profound governance blind spot: **competition increasingly "emerges" late, arriving not as a fledgling insurgent but as a scaled, AI-native challenger with a fundamentally different risk posture and operating philosophy**. Boards that rely solely on traditional industry monitoring or public-market signals will consistently be caught off guard.

A further accelerant is regulatory lag. When regulation cannot keep pace with technological change, entrepreneurial disruptors gain asymmetric advantage: they can enter emerging domains (AI-native business models, decentralized finance, synthetic biology) long before incumbents can navigate legacy compliance obligations. Far from slowing innovation, regulatory uncertainty can create temporary but powerful competitive moats — one of the reasons AI fundraising continues to accelerate.

The friction between old governance logic and new market dynamics is no longer theoretical. It is reshaping competitive outcomes. Public-company boards must now navigate quarterly pressures while simultaneously preparing for existential challenges from entrepreneurial disruptors moving at exponential speed.

Understanding why legacy models are failing is necessary, but insufficient. Directors need clear visibility into where value creation is shifting and how the entrepreneurial economy is transforming competitive dynamics. **Emergent Governance®** requires boards to not only mitigate risk but actively invest in reinventing the future — treating innovation ecosystems, private-market dynamics, and emerging competitors as part of their strategic landscape, not as peripheral noise.



Capital allocation trends show the impact – both for growth and for disruption - the Entrepreneurial ecosystem has experienced.

Private AUM has increased in relative size, while the number of public companies decline and IPO exits are later and companies larger on exit.

Sources: CB Insights, PitchBook

II. Steering an Emergent Future

Boards today face a dual leadership obligation. First, to build a better future—one where humanity thrives and nature flourishes. Second, to minimize societal and environmental harms as unprecedented transformations unfold. Steering this emergent future requires both imagination and discipline: the courage to pursue opportunity and the responsibility to govern complexity with intention.

A Future Roadmap

The world's leading futurists, technologists, and long-horizon investors share a coherent view of what lies ahead: we are entering a period of exponential convergence, where multiple technology platforms evolve not linearly or independently but in mutually reinforcing ways that reshape entire industries and redefine what is possible[8,9,10].

This is not a speculative exercise. It is the **strategic landscape** directors must actively steward. These converging technologies determine the speed of disruption, the shape of competition, the skills required of workforces, and the resilience of societies. Boards must understand convergence not in technical detail, but in terms of **strategic exposure, opportunity pursuit, and long-term value creation**.

Five Platforms Converging, Creating Abundance

ARK Investment's Big Ideas 2025 identifies five innovation platforms advancing simultaneously: Artificial Intelligence, Robotics, Energy Storage, Public Blockchains, and Multiomic Sequencing. Their intersections—AI with biology, sensors with programmable matter, blockchain with supply chains and energy—create new systems with capabilities greater than the sum of their parts[8].

Peter Diamandis' abundance framework adds a societal dimension: exponential technologies demonetize, dematerialize, and democratize entire categories of value[23]. By 2030, more than 125 billion connected devices may fuel AI's autonomous capabilities and global economic growth.

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For directors, the message is clear: value creation is shifting from physical assets to intelligent, adaptive, data-driven systems. Strategic foresight, technology literacy, and governance of innovation are now core board competencies.

Business Models Are Being Reinvented

Generative AI is already restructuring operating models across sectors—and it represents only the first wave. Early examples illustrate the magnitude of change:

- JPMorgan's AI assistants delivered over $2M in ROI by dramatically reducing research time.
- BMW improved production quality through AI-enabled scheduling and planning.
- BrainBox AI reduced HVAC energy costs by 25% and emissions by 40%.
- Healthcare is shifting from "sick care" to preventative intelligence powered by wearables and full-body scanning.

A second AI wave is emerging from constructed data and physical experimentation. Project Prometheus, a $6.2B AI venture co-led by Jeff Bezos, signals this frontier: AI systems that learn, reason, and optimize through real-world trial-and-error—not just digital data. These systems will design and fabricate chips, vehicles, robotics, and aerospace components, transforming industrial innovation.

Simultaneously, Khosla Ventures' "AI-infused roll-up" strategy illustrates the speed of transformation: every profession becomes a startup opportunity when AI is embedded at the core of the business[24].

These business model transformations, while creating enormous economic value, also accelerate workforce disruption and volatility.

Human-Centric AI as a Board and Systems Governance Imperative

As AI systems increasingly influence financial advice, mobility, diagnostics, hiring, access to services, and decision-making, human-centric AI governance must become a core responsibility not only for corporate boards, but for governance at the systems level. Ensuring that AI enhances fairness, autonomy, dignity, and human agency is a systems governance challenge, not merely a corporate compliance issue.

AI cannot be governed solely as a tool for efficiency or productivity. Without intentional guardrails, it can amplify inequities, displace workers without transition pathways, and erode societal trust. If governed well, AI can expand human capability, strengthen community resilience, and support flourishing societies[25,26].

Boards must also recognize that AI is not only an enterprise technology but an intelligence layer influencing the social systems in which organizations operate. Properly governed, AI becomes a continuous stakeholder-intelligence system, providing real-time insight into customer sentiment, workforce dynamics, community well-being, and emerging social signals. This extended line of sight enables directors to detect early risks, understand lived experiences, and align strategy with long-term human and planetary well-being.

Innovating Governance to Govern Innovation

Ultimately, human-centric AI is about ensuring that innovation serves humanity, not the other way around. It requires directors to govern with values, foresight, and a systems lens—recognizing the interconnectedness of technology, society, and the environment.

Workforce and Societal Implications

The same systems that unlock productivity can eliminate intermediate roles and accelerate volatility. Societies need foundational systems—healthcare, housing, education, mobility—that absorb this disruption and enable workers to adapt, retrain, and participate in the emerging economy[24,26]. Universal Basic Services offer one illustrative model, but they are not the centerpiece; the broader point is that boards operate within—and depend on—societal systems that must remain stable during transition. The broader imperative is this: corporations depend on societal stability during rapid transformation.

The Exponential Organization Imperative

Exponential organizations, often startups and pre-IPO, now compete globally with capabilities once accessible only to multinationals[18,19]. Their advantage? **Near-zero marginal cost**, **data-driven learning loops**, **boundaryless digital talent models**, and **architectures designed for iteration, not efficiency**.

Incumbents optimized for slow, predictable environments face extinction-level threats. Directors must recognize that **organizational design—not just strategy—determines adaptability**. Boards are responsible for ensuring that leadership, talent, incentives, and governance models reflect the new competitive reality.

Sector Transformations on the Horizon

Every sector is becoming an AI-enabled sector. Energy infrastructure is being redesigned to support AI-driven demand; autonomous systems require decentralized decision-making at the edge; vertical AI models are transforming professions; multiomics and tools like AlphaFold 3 are reshaping biotech with unprecedented speed[10,27.]

For directors, the core insight is this: sector boundaries are dissolving, and disruption is coming from adjacent, unexpected domains. Boards must oversee see signals, assess their impact potential, and develop strategy with a systems lens—not a narrow industry lens.

Why Governance Matters: The Stakes Are Existential

These converging forces create extraordinary opportunity—and unprecedented risk. Khosla Ventures describes twin futures: one in which AI enables abundance, democratizes access, extends human longevity, and solves civilization-scale challenges; and another in which it concentrates power, accelerates inequality, and constrains human agency[23].

The future will emerge regardless. The question is whether boards will **steward this emergence toward human thriving and planetary flourishing—or allow it to unfold without intention**.

Together, these forces define the first leadership obligation: to build a better future of human thriving and planetary flourishing. The second obligation is equally urgent — to minimize societal and environmental harm during this transition. Meeting both obligations requires boards to shift from an organizational governance lens to systems governance lens, understanding the interdependence of the conditions that enable long-term value creation.

Building Stability Foundations

As exponential change accelerates, societies require stability foundations—the interconnected systems that absorb volatility and enable individuals and communities to thrive health, housing, infrastructure, community, and belonging. Each of these systems is already under strain, and the pressures of technological acceleration will make these deficits more acute[13,14].

Boards cannot treat these as externalities. Organizations operate within these systems: they draw from labor markets, depend on infrastructure, influence communities, and affect environmental and social conditions that ultimately shape long-term value creation.

A Systems Governance Lens

A systems governance lens recognizes that organizations do not operate in isolation — they operate within, rely upon, and influence broader social, environmental, and technological systems. For directors, this means governance must extend beyond the firm to the conditions that enable long-term value creation, societal stability, and human thriving[11,14,16].

A systems governance approach requires directors to:

- Understand cross-sector dependencies

  Boards must grasp how housing, healthcare, energy, infrastructure, technology, labour markets, and ecosystems interact — and how shocks in one domain rapidly cascade into others. Strategic decisions must account for these interdependencies, not treat them as externalities.

- Anticipate second- and third-order impacts

  Emergent technologies, policy changes, and economic shifts rarely produce linear outcomes. Directors must expand their analysis beyond immediate effects to consider distributional impacts, system-wide resonance, unintended consequences, and long-tail risks.

- Govern through networks, not silos

  Resilient outcomes increasingly require collaboration across public, private, civic, Indigenous, and community actors. Directors must support — and sometimes initiate — cross-sector partnerships that can mobilize resources, align incentives, and respond cohesively to systemic challenges.

- Evaluate strategy within broader societal and environmental contexts

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Corporate strategy cannot be detached from the societal foundations that enable it. Boards must consider how business model choices influence — and are constrained by — social cohesion, infrastructure capacity, environmental boundaries, regulatory evolution, and public trust.

• Support societal resilience as a condition for organizational resilience

Organizations depend on functioning systems: healthy communities, stable institutions, trustworthy information ecosystems, reliable energy, planetary stability. By recognizing these dependencies, boards can align investments, innovations, and partnerships to strengthen the systems that sustain long-term value.

• Govern for emergence, not static conditions

Systems today evolve through feedback loops, innovation cycles, and non-linear dynamics. Directors must steward strategy, talent, and technology choices with adaptive capacity — enabling the organization to adjust as systems shift around it.

• Harness the power of data and AI tools for stakeholder insight and to understand system dynamics

AI can help boards detect emerging signals, anticipate societal pressures, understand stakeholder needs, and identify shifts in sentiment or community well-being. Systems governance requires continuous visibility, not episodic reporting[28,29,30].

A Balanced View of Universal Basic Services

Universal Basic Services (UBS) may be possible one approach for large scale disruption, but it is not the center of this argument. The broader idea is that **societal resilience must keep pace with technological transformation**, and boards have a role in shaping the conditions for inclusive adaptation—through investment, innovation choices, workforce transition strategies, and ecosystem partnerships.

Systems-level governance requires holistic assessment and action across business clusters, workforces, neighborhoods, and the natural environment. It is not enough to work within operational silos; governance for transformation demands networked partnership, accountability, and long-term shared vision.

Cross-Sector Innovation as Evidence

From energy transitions in emerging economies to AI-enabled community finance and satellite-supported resource management, global examples demonstrate that **systems-level partnerships are emerging as the new architecture of societal resilience**. They are not transactional PPPs; they are long-term, networked collaborations.

This future roadmap clarifies both the **stakes** and the **governance opportunity**. The question is no longer whether exponential changes will reshape society—it is whether boards will have the foresight, integrity, and courage to govern toward flourishing outcomes.

The answer lies in reimagining the fundamental dimensions of board work through the lens of **Emergent Governance®**.

III. The Innovation of Governance

Governance itself is undergoing transformation[31]. The tools, assumptions, and rhythms of legacy governance—periodic reporting, siloed oversight, backward-looking analysis—were built for a different world. In an era of exponential technological convergence, shifting societal expectations, ecological boundaries, geopolitical fragmentation, and regulatory uncertainty, governance must evolve from a static function into an adaptive, intelligent, and systems-aware discipline. Emergent Governance® represents this shift: a model of leadership that anticipates the future, aligns decisions with values, and builds strategy with intention.

Boards today must operate not only as stewards of organizations but as stewards of interconnected systems—technological, ecological, social, and regulatory—whose stability determines long-term value creation. Governance must therefore innovate at the same pace as the world it seeks to guide.

Rethinking Governance for a Transformative Age

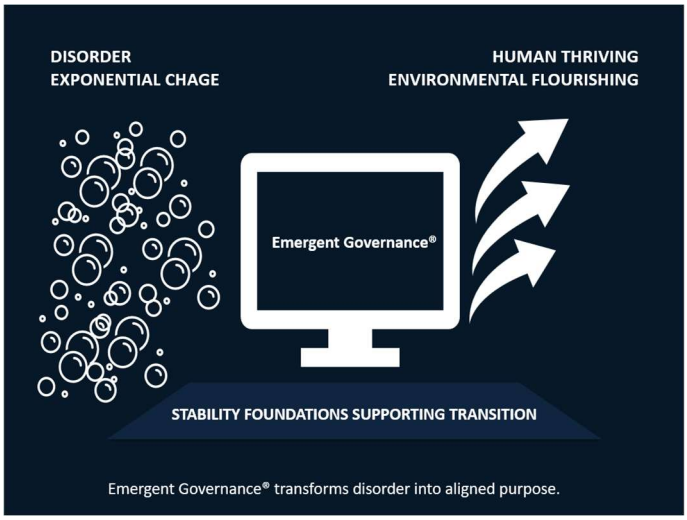
Legacy governance frameworks assumed a world of incremental change, linear cause-and-effect, and predictable industry boundaries. Today's environment is defined by non-linear dynamics, cross-sector interdependencies, and rapid emergence—where innovation triggers cascading effects across markets, communities, infrastructure, and ecosystems.

In this context, governance can no longer be primarily backward-looking. Boards must shift from periodic oversight to continuous sensemaking, from static strategy to adaptive strategy, and from risk avoidance to purpose-aligned opportunity pursuit. Governance must not only respond to regulation but inform and shape it, ensuring that the rules governing AI, sustainability, and digital economies remain ethical, relevant, and achievable.

Emergent Governance® begins with a changed mindset: the recognition that governance itself is both a domain and tool of innovation.

What Emergent Governance® Is—A Clear Definition

Emergent Governance® is an adaptive model of oversight and leadership. It recognizes that the emerging technology forces have the potential for unprecedented change and that these changes can and should be guided by governance at both the organization and system level and that they should also be embraced as tools of governance. It integrates emerging technology development insights with its own real-time technology intelligence, values-based judgment, and systems-level awareness to intentionally shape futures of human thriving and planetary flourishing at the organization and systems level.



Emergent Governance® is:

- **Connected and Intelligence-enabled**—powered by data, AI, stakeholder insight, and environmental signals
- **Values-anchored**—guided by purpose, ethics, and human agency
- **Systems-aware**—recognizing interdependencies across sectors, societies, and ecosystems
- **Tuned to signals and future-oriented**—anticipatory rather than reactive
- **Continuously and rapidly learning and evolving** in real time as the world evolves
- **Human centered**—ensuring that technology serves humanity, not the other way around

A Model for the Future: The Emergent Governance® Command Center

In an era of accelerating change, the boardroom evolves into a strategic command center—a place where human judgment, values, and purpose are amplified by real-time intelligence across the systems the organization depends on and those connecting it to its outside stakeholders. This command center integrates multiple streams of insight: emerging technology directions and impacts, internal performance and risk signals, stakeholder sentiment, environmental and planetary indicators, community well-being, geopolitical dynamics, and emerging policy and regulatory trends.

Its power lies not in technology alone, but in the board's ability to synthesize, interpret, and act on these signals with clarity and intention. The command center equips directors to govern in continuous time—seeing farther ahead, understanding interdependencies, and responding with agility as systems shift around them.

Within this model, AI governance assistants serve as one component of the intelligence infrastructure. They do not replace directors or hold fiduciary duty. Instead, they extend the board's ability to detect patterns, surface underrepresented perspectives, and analyze emerging risks and opportunities across technological, societal, environmental, and policy domains. In practice, they operate like always-available domain experts—supporting director judgment, not substituting for it.

By weaving together machine intelligence, stakeholder and environmental insight, emerging technology impacts, regulatory awareness, and human deliberation, the command center enables boards to meet their dual obligations: to pursue the opportunities of an abundant future and to minimize the societal and environmental harms that can arise along the way.

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Principles of Emergent Governance®

Emergent Governance® is guided by seven core principles:

1. **Govern for emergence, not stability**
   Expect change, design for adaptability.
2. **Anchor decisions in values and purpose**
   Use ethics, dignity, and flourishing as a decision architecture.
3. **See and steward systems, not silos**
   Understand interdependencies and influence outcomes across domains.
4. **Leverage human-centric and sustainability-centric AI**
   Ensure AI advances human agency and planetary well-being.
5. **Integrate continuous stakeholder and environmental intelligence**
   Treat communities, ecosystems, and governments as stakeholders.
6. **Enable continuous learning and adaptation**
   Build governance systems that evolve with conditions.
7. **Balance opportunity pursuit with harm prevention**
   Advance innovation while mitigating societal and ecological risks.

Emergent Governance® is not an incremental update to governance practice. It represents a **transformation** in how boards:

- Interpret the world
- Engage with stakeholders
- Oversee technology
- Anticipate risk
- Shape regulation and policy
- Allocate capital
- Enable human and planetary flourishing

It shifts governance from **episodic review** to **continuous sensemaking,** from **organizational oversight** to s**ystems stewardship,** from **compliance** to **command,** from **reactive risk management** to **purpose-aligned future building**.

This innovation in governance is what enables directors to meet the dual obligations set out in Section II: **to build a better future, and to protect the systems that sustain it.**

IV. What Boards and Directors Must Do Now

To meet their dual obligations — building a flourishing future and minimizing societal and environmental harms — boards must evolve how they become aware of and interpret signals, make decisions, allocate capital, and steward the systems their organizations depend on. The following priorities reflect Emergent Governance® capabilities, not checklists, and recognise that directors must act across short, medium, and long-time horizons.

A. Immediate Priorities (Actions Directors Can Take Now)

1. Establish a Foresight Rhythm

Integrate foresight discussions as standing board agenda items, monitoring emerging technology developments, and assessing their impact, using scenario analysis and predictive analytics to test strategic assumptions and identify emerging opportunities and risks.

2. Monitor the Startup and Scale-Up Landscape

Treat the innovation economy as an early-warning system and investment opportunity. Track emerging AI-native competitors, funding trends, and business-model innovations through credible sources such as CB Insights, Startup Genome[5], and scale-up councils like CCI [18,19,20]. This helps boards anticipate emerging competitors and disruption long before they appear in public markets.

3. Implement Baseline AI Governance Guardrails

Ensure both the board and the organization use AI systems that are transparent, safe, fair, and auditable. Initial governance frameworks — including NuEnergy.ai's Machine Trust Index and sustainability platforms such as LevelUp ESG — help directors operationalize trust efficiently and without waiting for regulatory finalization [28,29].

B. Near-Term Governance Shifts (Structural Capability Building)

4. Redesign Board Information Flows Around Continuous Sensing and Response

Move beyond periodic reporting to real-time intelligence dashboards integrating operational, financial, stakeholder, environmental, and regulatory signals. Use these insights to complement human judgment and enhance the board's emerging role as a strategic command center.

5. Strengthen Systems-Thinking Competence

Equip directors to understand cross-sector interdependencies and second-order effects across AI, climate, energy, supply chains, labour markets, and community systems. Treat major transformations as interconnected, not standalone domains.

6. Align Strategy with Societal Transition Foundations

Support foundational systems — housing, health, education, infrastructure, community — that underpin workforce stability, talent pathways, and long-term market health. Boards should incorporate these dependencies into strategy, risk oversight, and investment decisions.

B. Medium-Term Capabilities (Building the Emergent Governance® Infrastructure)

7. Operate as a Strategic Command Centre

Evolve the boardroom into an intelligence-enabled command centre that synthesizes internal data, stakeholder sentiment, environmental indicators, policy signals, regulatory shifts, and sector disruption using them for decision making and learning on an emergent basis. Responsibly complement directors with AI-enabled governance assistants to enhance their ability to understand changes in real time and to provide underrepresented perspectives. This strengthens oversight, foresight, and strategic adaptability in real time.

8. Integrate Stakeholder, Environmental, and Policy Intelligence

Treat stakeholders, communities, ecosystems, and government as interconnected elements of the system. Use AI-enhanced tools to sense emerging needs, identify risks, and surface underrepresented perspectives — without replacing human judgment.

9. Shape — Not Just Respond to — Policy and Regulation

Engage with policy-shaping institutions, regulatory bodies, and innovation ecosystems (e.g., CIGI, OECD, national economic councils, sector regulators, and innovation hubs). Directors have a role in informing regulation so that it remains ethical, relevant, and achievable, especially in domains involving AI, sustainability, and digital markets.

D. Evergreen Director Capability Development

10. Build and Maintain Future-Ready Governance Capability

Emergent Governance® requires directors to be fluent in the forces reshaping the world as strategists and changemakers— the technologies, business models, societal expectations, and regulatory dynamics that determine where opportunity and risk are emerging. A director cannot govern the future without being well informed about what is coming next[31].

This requires formal governance credentials that ground directors in their fiduciary roles — through global programs like Competent Boards, regional or country- and geography-specific qualifications such as from ICD or NACD. But credentials alone are insufficient in a world of continuous change.

Directors need an evergreen flow of insight drawn from competency building multiple sources:
global governance institutions such as Competent Boards and Board Intelligence, leading universities such as

INSEAD, MIT, and Rotman, innovation ecosystem organizations, public policy bodies, and trusted advisory networks.

Sustained learning, diverse insight, and AI-augmented understanding together build the future-ready capability required for directors to fulfill their obligations within an Emergent Governance® model.

V. Five Questions Every Board Director Should Ask

Boards today are not simply stewards of organizations; they are stewards of the systems shaping human and planetary futures. These five questions help directors anchor their work in **Emergent Governance®**, balancing opportunity pursuit with harm minimization.

1. Are we intentionally building an abundant future that reflects concurrent exponential changes?

> **Good answers** identify specific investments in AI, robotics, energy transformation, sustainability intelligence, or other exponential technologies aligned to long-term strategy.
> **Red flags** include vague statements about "monitoring trends" or "staying competitive" without concrete action or resource allocation.

2. What emerging signals are we not paying attention to?

> **Good answers** surface weak signals or early indicators—whether technological, stakeholder-driven, environmental, regulatory, or from the startup ecosystem—that expand the board's line of sight.
> **Red flags** include reliance solely on management for emerging issues or assuming existing dashboards provide full visibility.

3. Whose voices or lived experiences are we not yet hearing?

> **Good answers** show that directors hear from stakeholders directly at times—employees, customers, communities, partners—and that AI-enabled stakeholder intelligence may complement those insights.
> **Red flags** include assuming internal reports capture lived experience or relying entirely on executive summaries.

4. What systems do our decisions affect, and how do we know?

> **Good answers** identify one or more systems influenced by strategic decisions—workforce, supply chains, communities, regulatory environments, or environmental dependencies—and show awareness of second-order effects.
> **Red flags** include narrow focus on direct operational impacts without acknowledging broader system-level consequences.

5. Are our decisions strengthening or weakening the foundations our employees, customers, and communities rely on?

> **Good answers** point to choices that support stability in areas such as workforce development, community well-being, environmental resilience, housing, health, or belonging.
> **Red flags** include treating these foundational systems as "social issues" unrelated to business continuity or long-term value creation.

VI. Exponential Uncertainty—The Fiduciary Imperative

These questions demand honest answers—and those answers demand action. The path forward is clear, the urgency undeniable, and the fiduciary imperative absolute.

Governance is being redefined not by regulation, but by innovation itself. Directors increasingly operate in environments where value is created — and destroyed — by technological, societal, and environmental shifts that move faster than traditional oversight models can track. The challenge is no longer merely meeting compliance requirements, but ensuring that governance actively enables long-term value creation, resilience, and sustainability. Boards must innovate governance at the same pace they expect the organization to innovate its products, services, and business models. In a world where innovation is continuous, emergent, and often unpredictable, **we must innovate governance to govern innovation**.

Emergent Governance® is how we ensure the future emerges as our intention, not our accident. The path to abundance, the outcomes for human thriving and environmental flourishing—these are ours to choose and governance is how we build them. Our legacy awaits.

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Emergent Governance® – Consolidated Citation List

I. Introduction & Foundational Evidence

1. World Economic Forum & Marsh McLennan. (2024). *Global Risks Report 2024: Understanding Systemic Risks in an Interconnected World*. Available at: https://www.weforum.org/global-risks/
2. Edelman. (2025). *2025 Edelman Trust Barometer: Trust in Institutions Across OECD Nations*. Available at: https://www.edelman.com/trustbarometer
3. DNV. (2025). *Energy Transition Outlook 2025*. Available at: https://www.dnv.com/
4. Oxford Economics. (2024). *AI and Robots in 2025: The Robotics Revolution We Predicted Has Arrived*. Available at: https://www.oxfordeconomics.com/
5. World Health Organization (WHO). (2025). *Ageing and Health Fact Sheet*. Available at: https://www.who.int/
6. Arm Holdings / Forbes. (2024). *AI Power Consumption: Rapidly Becoming Mission-Critical*. Forbes, June 2024. Available at: https://www.forbes.com/
7. OECD. (2025). *Regulatory Policy Outlook 2025: Regulating for the Future*. Available at: https://www.oecd.org/
8. ARK Invest. (2025). *Big Ideas 2025*. Available at: https://www.ark-invest.com/research
9. Future Today Institute. (2024). *Tech Trends 2024 Report* (17th Edition). Available at: https://futuretodayinstitute.com/
10. Future Today Institute. (2025). *Tech Trends 2025 Report* (18th Edition). Available at: https://futuretodayinstitute.com/
11. Jørgensen, T. (2023). *Stewards of the Future: How Boards Shape Tomorrow's Leaders*. Available through Competent Boards/Board Intelligence.

II. Trust, Climate & Systemic Resilience (Citations 12–14)

12. Eurofound. (2024). *Trust in National Institutions Falling: Evidence from European Social Survey*. Available at: https://www.eurofound.europa.eu/
13. Intergovernmental Panel on Climate Change (IPCC). (2023). *Climate Change 2023: Synthesis Report. Sixth Assessment Report (AR6)*. Available at: https://www.ipcc.ch/
14. Organisation for Economic Co-operation and Development (OECD). (2024). *Social Resilience and Inclusive Growth: Building Foundational Systems*. Available at: https://www.oecd.org/

III. Fiduciary Duty & Directors' Obligations

15. Commonwealth Climate and Law Initiative (CCLI). (2024). *Directors' Duties Navigator: Climate Risk and Sustainability Disclosures* (4th Edition). Available at: https://climate-governance.org/

16. DeMarco, L. & Vollmer, D.T. (2025). *Nature-related Risks and the Duties of Directors of Canadian Corporations*. Commonwealth Climate and Law Initiative & Resilient LLP. Available at: https://commonwealthclimatelaw.org/

17. Lawson Lundell LLP. (2025). *Can a Board of Directors Breach Their Duties by Ignoring AI? A Litigator's View*. Available at: https://www.lawsonlundell.com/

IV. Entrepreneurial Economy & Innovation Ecosystem

18. Startup Genome. (2024). *Global Startup Ecosystem Report 2024*. Available at: https://startupgenome.com/

19. CB Insights. (2025). *State of AI Report, Q3 2025*. Available at: https://www.cbinsights.com/

20. Council of Canadian Innovators (CCI). (2024). *Scale-Up Strategy and Innovation Ecosystem Report*. Available at: https://www.innovators.ca/

21. Business Development Bank of Canada (BDC). (2024). *Industrial Innovation Venture Fund II & Patient Capital Strategy*. Available at: https://www.bdc.ca/

22. PitchBook. (2025). *Venture Capital Time-to-Exit Trends*. Available at: https://pitchbook.com/

V. Future Vision & Abundance (Citations 23–24)

23. Diamandis, P. H., & Kotler, S. (2012). *Abundance: The Future Is Better Than You Think*. Free Press.

24. MIT Sloan Management Review. (2024–2025). *Research on AI, Digital Transformation, and Governance*. Available at: https://sloanreview.mit.edu/

VI. AI Governance & Policy Frameworks (Citations 25–27)

25. U.S. National Institute of Standards and Technology (NIST). (2023). *AI Risk Management Framework*. Available at: https://www.nist.gov/

26. Organisation for Economic Co-operation and Development (OECD). (2024). *AI Policy Observatory & OECD AI Principles*. Available at: https://oecd.ai/

27. DeepMind. (2024). *AlphaFold 3*. Nature. Available at: https://deepmind.google/research/

VII. Governance Innovation & Board Intelligence (Citations 28–31)

28. NuEnergy.ai. (2025). *Machine Trust Index, Machine Trust Platform & AI Sovereignty Assessment Framework: Comprehensive AI Governance and Assessment Framework*. Available at: https://www.nuenergy.ai/

29. SustainGRC (formerly LevelUp ESG). (2025). *AI-Native ESG & GRC Platform: Financial-Grade Data Intelligence for Sustainability and Governance Risk Management*. Available at: https://www.levelupesg.co/

30. Board Intelligence. (2025). *Board Value Index*. Available at: https://www.boardintelligence.co.uk/

31. Competent Boards / Jørgensen, T. (2024). *The Future Boardroom: Preparing Directors for Exponential Change*. Available at: https://www.competentboards.com/ or https://www.boardintelligence.co.uk/