IN THIS ISSUE

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Contents

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From the Editor

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As I introduce this 47th issue of the *International Leadership Journal,* an online, peer-reviewed journal, I am happy to share some exciting news. After nearly two decades of leadership by TST, Inc., the *International Leadership Journal* will now be published by COTRUGLI Business School, the leading business school in Southeast Europe. I will remain as editor, and some members of the editorial board will also continue with the publication. New international editorial board members will be added soon.

This inaugural issue by COTRUGLI focuses on artificial intelligence (AI) and contains five articles, a perspective piece, and a pedagogy piece. In the first article, Kapusta expands on his vanguard leadership model, positing vanguard leadership (VL) as a highly adaptive framework derived from modern military "dynamic warfare" strategies and cutting-edge commercial innovation tactics. In addition to a comparative analysis of transformational and servant leadership, he presents real-world case studies that demonstrate VL in action, illustrating how human leadership augmented by AI can serve as a force multiplier for organizational performance.

Petener also focuses on VL, this time as a framework through which to examine the evolving intersection of modern military doctrine and corporate leadership. Drawing from contemporary business cases, military strategy, and AI innovation, he outlines how decision-makers can adopt a warfare mindset to catalyze transformation.

Brcic proposes a framework to help leaders to determine when to utilize artificial intelligence (AI), rely on human insights, or combine the two to optimize decision-making. It presents the relative effectiveness of AI and human judgment at each decision level—strategic, operational, and tactical—and recommendations on how to combine them for optimal results. Similarly, Tse emphasizes how AI should be seen as complementary to human capabilities His article focuses on agentic AI—autonomous systems that make decisions and perform complex tasks with minimal human oversight—and their transformation of certain industries. He discusses key implementation challenges, such as security concerns, workforce transition strategies, and AI governance frameworks.

Režun and Kapusta join forces for the final article, which is also grounded in the VL framework. It examines the resource demands of generative AI, focusing on energy and water usage, efficiency comparisons among LLMs, and regional implications in Europe, the United States, and Asia. It underscores the urgent need for leaders to harness AI as a force multiplier while navigating its ecological and economic challenges.

In his perspective piece, Esposito urges readers to recognize human limitations, e.g., finite knowledge and personal biases, and embrace the capabilities AI systems can offer, as well as the hidden perils of overreliance on these systems. He notes that leaders should embrace the idea that AI systems are our copilots, not our replacements.

Finally, McClellan offers a pedagogy piece on the role of the follower as a cocreator of leadership. He offers a workshop approach to examine the concept by inviting participants

to reflect on how their approach to following contributes to the leadership that emerges in the relationship between the leader and follower.

Please spread the word about *ILJ* to interested academics and practitioners and remember to visit http://internationalleadershipjournal.com. Also, feel free to propose a topic by contacting me at jcsantora1@gmail.com.

Joseph C. Santora, EdD
Editor

ARTICLES

Vanguard Leadership: Integrating Dynamic Warfare Strategies and Innovation Tactics in an AI-Driven World[*]

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In an era defined by artificial intelligence (AI), blockchain, and automation, business leadership is undergoing a paradigm shift. This article expands on Kapusta's (2025) vanguard leadership model, positing vanguard leadership as a highly adaptive framework derived from modern military "dynamic warfare" strategies and cutting-edge commercial innovation tactics. Using the dynamic capabilities theory as a foundation, I examine how vanguard leadership equips organizations to sense and seize opportunities amid rapid technological change. A comparative analysis of transformational and servant leadership highlights the limitations of these traditional models in a volatile, uncertain, complex, and ambiguous (VUCA) environment increasingly characterized by autocratic decision-making and techno-competitive pressures. I present real-world case studies from COTRUGLI's CO-LAB mentorship network and HAI5 AI implementations that demonstrate vanguard leadership in action—from AI-driven HR transformations to Industry 5.0 initiatives—illustrating how human leadership augmented by AI can serve as a force multiplier for organizational performance. The discussion underscores an urgent imperative: Leaders are likely to have a brief window (approximately three years) in which to proactively embrace this evolved leadership model before lagging in the next wave of the Industrial Revolution. Objective insights and citations from current literature validate the need for this adaptive leadership approach as enterprises prepare for an AI-dominated future.

Keywords: artificial intelligence, case studies, dynamic capabilities, leadership, vanguard leadership, VUCA

The convergence of frontier technologies such as AI, robotics, and blockchain will rapidly redefine the global business landscape. As we settle into the mid-2020s, organizations should adopt socioeconomic and geopolitical transformations driven by technology that are analogous in pace and impact to a fast-evolving battlefield. Competitive environments may look like a constant state of dynamic warfare—requiring quick adaptation, strategic agility, and the boldness to navigate high-stakes challenges. For example, the United States and China are racing to integrate AI and automation at scale, creating a tech-driven arms race in business in which efficiency and innovation are paramount. In this context, European and

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global business leaders find themselves at a critical juncture: either embrace transformative technologies and agile strategies or risk being left behind.

Traditional leadership paradigms are being stress-tested by this new reality. Frameworks like transformational and servant leadership, which rose to prominence in more stable and collaborative eras, may prove insufficient in a future dominated by autocratic, techno-competitive forces and relentless change. *Transformational leadership* focuses on inspiring vision and organizational change, and *servant leadership* focuses on humility and service to followers. Both are positive approaches, yet neither was forged in an environment of blinding technological velocity and ruthless global competition. As AI and automation accelerate decision-making and compress planning cycles, business leaders must evolve beyond inspiration and empathy alone; they must learn to fight on the frontlines of innovation, making rapid, data-driven decisions like a military tech team adapting in real time on a battlefield. A recent World Economic Forum report notes that AI is fundamentally changing leadership parameters and imposing new responsibilities on executives to manage data, ethics, and speed in decision-making (Assis, 2024). Likewise, an IBM global study (Goldstein, 2023) found that 40% of the workforce will require reskilling due to AI within the next three years—a stark reminder that leaders have only a short window to prepare their organizations and talent for imminent disruption.

Against this backdrop, vanguard leadership has emerged as a proposed new model for the AI-driven world. Pioneered by Kapusta through initiatives at COTRUGLI Business School's CO-LAB and the HAI5 project, vanguard leadership draws parallels to elite military units and innovation hubs, advocating for highly adaptive, tech-augmented leadership. The term *vanguard* evokes a military vanguard—the front line of an advancing army—symbolizing how leaders must now position themselves at the forefront of change. In a recent workshop, "Vanguard Leaders for SDG in an AI World," vanguard leadership was introduced as a forward-thinking framework integrating resilience, critical thinking, and AI augmentation to drive meaningful action in a fast-evolving global landscape (UNIDO AIM Global Forum, 2024). This article explores the contours of vanguard

leadership, situating it within the scholarly lens of the dynamic capabilities theory. It is compared to established leadership models to argue that older styles require a radical overhaul in the face of what may be a more autocratic and technologically intense future. Through case studies from COTRUGLI's CO-LAB and HAI5 implementations, I illustrate how vanguard leadership principles are already being applied and underscore how combining AI capabilities with human leadership can yield exponential benefits, acting as a force multiplier rather than a replacement for human ingenuity. Ultimately, I posit that vanguard leadership offers a pragmatic and theory-backed blueprint for leaders to survive and thrive in the coming decade's turbulent environment.

Theoretical Framework: Dynamic Capabilities in a VUCA World

To ground this exploration theoretically, I applied the dynamic capabilities framework. Teece et al. (1997) define the dynamic capabilities theory as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (516). In contrast to ordinary operational capabilities that keep an organization running daily, dynamic capabilities enable it to purposefully create, extend, or modify its resource base in response to change. This concept is essentially about agility at the strategic level—sensing changes in the environment, seizing new opportunities, and transforming or reconfiguring assets and processes accordingly.

   In today's volatile and technology-driven markets, dynamic capabilities have become synonymous with survival and sustained competitive advantage. Firms with strong dynamic capabilities were shown to adapt more swiftly and innovatively during shocks like the COVID-19 pandemic, yielding improved performance outcomes. Dynamic capabilities help in several ways to ensure organizational outcomes, persistence, and decision-making in uncertain times, directly contributing to higher innovation, productivity, and even employee satisfaction. In essence, dynamic capabilities are about being proactively adaptable—a now indispensable trait. The environment has often been described as a *volatile,*

uncertain, complex, ambiguous (VUCA) world, a term borrowed from military education that underscores unpredictability.

Leadership plays a pivotal role in cultivating dynamic capabilities. Top leaders must foster a culture of continuous learning and ensure that their organizations can sense new technological trends or market shifts, seize them by reallocating resources or reimagining strategies, and transform by updating business models or structures. This aligns closely with the demands on a vanguard leader. Vanguard leadership (VL) is about embedding these dynamic capabilities at the leadership level—leaders must become highly agile, learning-focused, and ready to immediately redirect the organization.

The military strategy offers a vivid analogy. Legendary U.S. Air Force fighter pilot John R. Boyd introduced the OODA loop (observe–orient–decide–act) as a model for rapid decision cycles in air combat. His insight was that agility—the ability to cycle through OODA faster than an opponent—confers a decisive advantage: "Whoever can handle the quickest rate of change is the one who survives" (Coram, 2002, as cited in Sherer, 2024, para. 3). Adaptability, he argued, is the source of power in conflict, and executing decision loops faster than the environment (or competition) is key to victory. Dynamic capabilities in business echo this principle, and VL effectively seeks to operationalize it within leadership behavior. A vanguard leader must constantly observe emerging tech and market signals, orient by synthesizing this information with strategic vision, decide swiftly (often leveraging AI analytics for insight), and act to implement changes—all while competitors may still be grappling with what just happened. This represents leadership as a continuously cycling, proactive strategic function, rather than a static planning role.

Using the dynamic capabilities theory as my framework, I established a scholarly basis for why a new leadership model is needed. The theory validates that the capacity to adapt and reconfigure separates thriving organizations from stagnant ones. VL, with its emphasis on agility and augmentation by technology, can be seen as the human leadership corollary to dynamic capabilities: it is the leadership approach designed to develop and wield dynamic capabilities in the organization. The following sections will elaborate on what VL entails and how it diverges from

or builds upon prior leadership models—ultimately showing that it is uniquely suited to lead organizations in an AI-saturated, fast-moving future.

Vanguard Leadership

Origins in Military Strategy and Innovation Tactics

VL deliberately fuses modern military strategy principles with commercial innovation tactics to create a leadership approach for extreme adaptability. The term *vanguard* symbolizes being at the forefront—much like the military vanguard that leads an attack—and this model calls for leaders to position themselves and their teams at the leading edge of change. Kapusta's (2025) formulation of VL arose from observing parallels between how elite military units operate in dynamic combat situations and how pioneering tech companies or innovation teams operate in fast-changing markets.

   At its core, VL is defined by four pillars: (a) resilience, (b) critical strategic thinking, (c) AI augmentation, and (d) a tribe mentality combined as a composite force multiplayer. This was highlighted in the previously mentioned workshop, "Vanguard Leadership for SDG in an AI World," in which participants discussed a working definition and framework for VL. The goal is a leadership style that can drive meaningful action toward complex goals, like the UN Sustainable Development Goals (SDGs), in a rapidly evolving landscape using every tool available, human or machine.

   Military Dynamic Warfare Strategies. VL borrows heavily from military agility and mission command doctrines. Modern military teams, especially special forces and tech units, are trained to adapt on the fly when conditions on the ground change. They follow a clear intent but have the autonomy to change tactics as needed—a concept known as "commander's intent" and decentralized command. A famous mantra of the U.S. Marines is to "improvise, adapt, and overcome," reflecting a mindset in which unexpected obstacles are met with creative adaptation rather than waiting for instructions. The previously mentioned OODA loop is one such strategic concept that has migrated from dogfighting into business strategy precisely because it underscores speed and flexibility. VL internalizes

these ideas: a vanguard leader operates like a field commander who trusts their training and intel (data) to make split-second decisions. Being proactive and decisive under ambiguity is encouraged. We can see echoes of this in the Vanguard MBA program at COTRUGLI Business School, which explicitly asks participants, "Are you ready to join the special forces of business and drive global change?" This metaphor portrays top leaders as akin to special forces operators—highly skilled, trained for unpredictability, and equipped with advanced tools. Indeed, the Vanguard MBA instills a "vanguard mindset" described as innovative, resilient, and impact-driven, all attributes one might ascribe to elite military leadership in dynamic scenarios.

One concrete military-derived concept in VL is viewing technology and AI as force multipliers. In military parlance, a *force multiplier* is a factor (like new technology, superior training, or strategic advantage) that allows a force to accomplish greater feats than its size would suggest. For example, real-time drone surveillance can multiply the effectiveness of a small infantry unit by providing superior intelligence. VL holds that AI and human capabilities are force multipliers for each other. Rather than AI replacing leaders, combining AI tools with human judgment can amplify the impact of leadership decisions. As Ragland (2024) put it, "AI is not just a tool—it is a force multiplier for leadership," capable of creating "super organizations" in which AI amplifies human intelligence and strategic insight (para. 2). Thus, a vanguard leader will readily deploy AI for data analysis, forecasting, and even scenario simulation in the decision-making process, effectively having a digital copilot. This is analogous to military leaders using advanced analytics and reconnaissance to make faster, better-informed decisions in the theater of war.

Commercial Innovation Tactics. On the business side, VL is informed by practices from agile management, lean startup methodology, and innovation labs. These tactics emphasize rapid iteration, experimentation, and a tolerance for failures as learning opportunities, much like soldiers performing "after-action reviews" to learn from missions.

In VL, leaders encourage a culture of experimentation and quick pivots, akin to how a startup might pivot its business model based on new customer feedback. They also borrow from design thinking and cross-functional "tiger teams" used in corporate innovation: assembling small, autonomous teams to attack problems with creative solutions and speed. One example is the Collaborative Lab or CO-LAB environment established at COTRUGLI Business School (n.d.). CO-LAB is described as a dynamic mentorship and innovation network that brings together industry professionals, alumni, and experts to co-create solutions and continuously learn. It integrates cutting-edge learning methods, AI, and other frontier technologies into its activities. This translates a tech startup incubator or innovation hub model into a leadership development context. Vanguard leaders are expected to be comfortable in such collaborative, tech-enabled environments—they lead not just by top-down directives but by orchestrating networks of knowledge (much like an innovation lab manager would).

Moreover, VL acknowledges that the narrative and priorities of leadership may be shifting in the AI era. There is a growing sentiment that efficiency and survival might start trumping some of the aspirational goals that defined leadership discourse in recent decades. For instance, the AIM workshop on VL (2024) raised the point that we might witness a "potential decline of green agendas, diversity initiatives, and inclusivity as efficiency narratives begin to dominate" (Workshop Highlights section, bullet 4). This does not mean those values are unimportant. However, it recognizes a hard truth: when faced with existential competitive pressures (or crises), organizations may prioritize whatever keeps them afloat, and a leader must be prepared to balance humanistic values with harsh efficiency if needed. VL, forged from military pragmatism, is candid about this possibility. It urges leaders to maintain a commitment to sustainability and inclusivity (especially since those are crucial for long-term societal goals like SDGs) and to be clear-eyed about trade-offs in a crunch. This realism is another way it differs from some idealized notions of leadership; it is leadership for what might be a more unforgiving environment.

In summary, VL's DNA is a hybrid: part special forces commander, part executive, part founder. It stands on the shoulders of dynamic capabilities—emphasizing rapid reconfiguration of strategy and structure—and uses AI to extend human capability rather than a foreign element. By being the first to adapt and innovate, a vanguard leader always seeks to occupy the front of the pack (hence, "vanguard"). This model is inherently designed for a landscape in which change is frequent and potentially hostile (e.g., competitors or even nation-states leveraging AI aggressively or market disruptions that punish slowness).

Comparative Analysis

To better understand the distinctiveness and necessity of VL, it is instructive to compare it with two well-known leadership models: transformational leadership and servant leadership. These models have been widely studied and praised in management literature, influencing many current leaders. However, the argument put forth by Kapusta (2025)—and supported in this article—is that while transformational and servant leadership offer important principles, they exhibit shortcomings in a rapidly changing, highly competitive (even autocratic) technological future.

Transformational Leadership vs. Vanguard Leadership

Transformational leadership (TL) is characterized by leaders who inspire and motivate followers to achieve extraordinary outcomes and, in the process, develop their leadership capacity. Transformational leaders engage in behaviors such as articulating a compelling vision, providing intellectual stimulation (encouraging innovation and creativity), offering individualized consideration (coaching and mentoring followers), and being role models with high integrity (idealized influence). This leadership style has fostered high levels of employee engagement, innovation, and organizational change. Indeed, transformational leadership is often a style that focuses on continuous learning and the transmission of increased knowledge. It can enhance organizational efficacy by motivating people to go beyond their comfort zones and aligning the team with a shared purpose.

However, TL is not a panacea, especially under extreme uncertainty and time pressure. One noted weakness is its strong emphasis on vision and big-picture change, which can sometimes lead to neglect of operational details or short-term execution challenges. In a crisis or a highly dynamic scenario, this could be problematic. Focusing on a grand vision without rapidly adjusting tactics might cause an organization to miss the proverbial forest fire while admiring the trees. Additionally, TL often hinges on the personal charisma and energy of the leader; it can border on a "cult of personality" if not careful. In a scenario in which AI and technology disruptions require swift iterative decisions and constant tactical pivots, a transformational leader might be effective in motivating the troops but could struggle if they are not deeply technologically savvy or rely too much on rallying rhetoric versus concrete data-driven action.

Most transformational leaders operate within somewhat hierarchical structures—they are at the top, inspiring downward. VL, in contrast, envisions the leader as part of a real-time network, less detached by hierarchy. A vanguard leader is expected to get into the specific details, augmented by AI that provides granular insights. This is a more "in the trenches" leadership style compared to the often visionary, somewhat lofty perch of a classic transformational CEO figure. In a sense, VL complements TL by injecting it with extreme agility and tech integration. A transformational leader might say, "Let's change the world with this new vision," whereas a vanguard leader would say, "Let's change right now, using every tool (AI, data, agile teams) at our disposal, and adjust the vision as we learn."

Another critical difference is how each type of leader addresses the external competitive threat level. Transformational leaders often assume a relatively benign external environment in which a leader's main task is to transform the internal culture and strategy of an organization (e.g., making a company more innovative or ethical). But in an autocratic and techno-competitive environment—meaning competitors or adversaries may not play by the same rules, or might leverage technology in aggressive ways—TL's collaborative and empowering nature may face challenges. There is some evidence that in hyper-competitive or hostile environments, overly democratic or participative approaches can slow down

decision-making when decisive action is needed. While transformational leaders are not necessarily democratic (they can be quite top-down in imposing a vision), they generally seek consensus around the vision and rely on buy-in. VL, channeling a small amount of military mindset, is more willing to make quick executive decisions when needed, supported by AI data—even if some followers are not yet entirely on board—because speed can be existential. It is about balancing inspiration with rapid execution.

Finally, consider technology adoption: transformational leaders encourage innovation, but the TL model does not explicitly include how to incorporate emerging technologies into leadership practice. VL was conceived in an AI context, so it explicitly expects leaders to use AI for predictions and use blockchain for transparency as part of how they lead. A transformational leader, in contrast, might promote an AI project by inspiring engineers. However, a vanguard leader would personally utilize AI tools in deciding strategy (e.g., scenario simulations and AI-driven market analytics in real-time). This makes VL more directly equipped for a future in which AI is pervasive in management.

In summary, while TL is valuable in that it encourages innovation and creativity and can make organizations more agile than transactional leadership, VL extends these traits further. It addresses the need for continuous reorientation and redeployment of resources (dynamic capabilities) at a tempo that TL theory never had to consider. TL might falter if the environment requires weekly or daily strategic shifts; VL thrives in that realm, thanks to its military-like emphasis on tempo and adaptation.

Servant Leadership vs. Vanguard Leadership
Servant leadership (SL) is another influential model (Greenleaf, 1970). It flips the traditional power hierarchy, suggesting that the leader's primary role is to serve their employees (or followers)—to listen, empathize, and help them grow, thereby unlocking higher performance. Servant leaders put the needs of others first and aim to empower their people. Key SL qualities include humility, empathy, listening, stewardship, and commitment to others' growth. In practice, a servant leader might spend time coaching team members, ensuring their well-being, and fostering a

strong sense of community and trust. Studies have shown that SL can lead to highly engaged employees, greater trust in management, and ethical climates.

However, SL also has limitations that become pronounced in a fast-moving, competitive context. One common critique is that servant leaders can be perceived as too soft or overly idealistic. By consistently prioritizing harmony and employees' needs, a servant leader might struggle when hard decisions need to be made—such as aggressive cost-cutting, rapid pivots, or swift confrontation of underperformers. In a high-pressure scenario (e.g., a cyberattack or a rival's deployment of a game-changing AI product), a leader who hesitates out of concern for upsetting people or seeks consensus for every decision could lose precious time. SL's collaborative nature often entails slower decision-making. As Cacciagioni (2023) succinctly notes, it carries the risk of "slow decision-making, the burden of constant selflessness . . . and the risk of being perceived as weak" if not balanced with pragmatism (Conclusion section, para. 1). This does not doom SL, but it means that in an environment where minutes or even milliseconds matter (as it does in algorithmic trading, cybersecurity responses), a pure SL approach might be untenable.

SL also requires a robust culture of reciprocity to work long term—the leader serves the team, but the team must also respect and not exploit the leader's goodwill. In cutthroat competitive scenarios, unscrupulous individuals might exploit a servant leader who is reluctant to exert authority. Suppose an enterprise faces competitors that are effectively "playing dirty" or autocratically efficient. In that case, a servant-led organization may be disadvantaged if it cannot rally to a hard-nosed strategy when needed. Servant leaders also spend considerable effort in nurturing and training, which is laudable. However, becoming a servant leader is not automatic, and simply being a servant leader does not always bring immediate results. The initial investment is time-consuming—something a fast-paced environment may not be able to afford before results are needed.

In an autocratic techno-competitive future, we might see adversaries (whether companies or regimes) that use data and AI for ruthless efficiency, surveilling performance and optimizing every process. In such a world, a servant leader's

focus on employee comfort could seem out of step if their organization is continually outmaneuvered by a competitor whose leadership is more directive- or analytics-driven. Today, we see adaptations: some leaders combine authoritarian decision styles with data analytics—"the dictator with a dashboard" archetype, who centralizes decisions but uses real-time data to make them. This is not to advocate for autocracy but to illustrate that technology can augment even hard command-and-control styles by giving one person a super-human analytical capacity. VL recognizes this reality: It tries to use the strength of decisive leadership augmented by technology without falling into the pitfalls of authoritarian abuse or the paralysis of over-democracy. It is, in a sense, a balanced response: It values the humility and service ethos of SL (a vanguard leader still needs to earn trust and take care of their people—elite military units have powerful team bonds and mutual trust, after all)—but it will not sacrifice speed and mission for the sake of comfort.

In other words, VL could be seen as tough-love leadership. A vanguard leader serves the mission and the people, but that might sometimes mean pushing people to adapt and grow quickly, even uncomfortably, to keep an organization viable. SL might struggle with causing discomfort; a vanguard leader, like a good commanding officer, knows that preparing the team for the coming challenges may require rigorous training and fast action that is not always pleasant in the short term. SL does not mean that leaders must comply with all staff requests. This view is a misconception. Sometimes, leaders must make unpopular decisions, and a servant leader can find that difficult to navigate. Vanguard leaders would frame those tough decisions as another form of service: serving a higher purpose (the survival and success of an organization and its stakeholders in the long run), even if it means momentarily not serving every immediate want of their followers.

SL's strengths—building trust, empowering others, and ethical guidance—remain important, and VL does not discard them. However, VL operates with a keener edge. It addresses SL's weaknesses by ensuring a leader maintains the authority to direct quick change and is explicitly attuned to external threats. It is less "leader as humble caretaker" and more "leader as guardian and innovator," who cares for their people by ensuring their organization wins the tough battles.

Hence, people have a future in which to thrive. Vanguard leaders will still listen and empathize (good military leaders deeply understand their troops), but act decisively and leverage technology directly. In a way, VL could be seen as a synthesis: It carries forward the visionary drive of TL and the people-centric ethos of SL. Still, it tempers both with a hard-nosed focus on agility, technology, and results under pressure.

Why Older Models May Prove Inadequate

To crystallize the comparative analysis, there are a few key points on why traditional models might falter in the anticipated future, whereas VL aims to excel.

  Pace of Change. TL and SL were conceptualized in periods when major shifts unfolded over years or decades. Now, AI can disrupt an industry in months. A 2023 IBM study (Goldstein, 2023) reported that executives believe 40% of workers need reskilling due to AI in the next three years. The "enterprise of tomorrow may not be able to run with yesterday's talent, and tomorrow's talent may not be able to rely on yesterday's ways of working" (Goldstein, 2023, para. 7). This implies that leadership approaches from yesterday (no matter how effective in their time) will likely not suffice for tomorrow. VL is explicitly built for rapid, continuous change—it is change-native, whereas others are change-responsive.

  Use of Technology. Older models treat technology as a context or, at most, a tool subordinate to leadership. VL treats it as a co-participant in leadership. In an AI-pervasive future, leadership that does not intimately integrate technology could become blindsided. For example, a servant leader might rely on team feedback for decision input, but a vanguard leader will supplement that with AI-driven data insights that humans might miss. A transformational leader might inspire a team to adopt AI; a vanguard leader will pilot how AI integrates into decision loops. As technology levels up, some organizations led by tech-enhanced vanguard leaders can outperform those led by well-meaning but tech-disconnected leaders.

  Autocratic Challenges. If the future sees a rise in autocratic actors (e.g., authoritarian corporations or states that leverage tech for dominance), purely collaborative or empathetic styles might be outpaced or outmaneuvered. VL does not endorse autocracy but equips organizations to compete on those terms when

necessary. It is willing to exert top-down authority in critical moments and harness AI for tight control when the situation demands (e.g., in cybersecurity emergencies or strategic pivots), all while striving to maintain the trust and morale of followers through prior transparency and integrity. It is a more ruthlessly pragmatic approach wrapped in a values-driven shell.

   Resource Reconfiguration*.* Dynamic capabilities require not just sensing and seizing but quick reconfiguration of resources. Transformational leaders may be great at sensing and seizing (seeing a need for change and rallying people to pursue it) but slower at reconfiguring structures if they rely on existing corporate hierarchies and processes to catch up to the vision. Servant leaders might hesitate to reorder teams or roles if it harms individuals' comfort. Vanguard leaders, by doctrine, will restructure on the fly—forming new cross-functional "task forces," dropping outdated product lines to free resources for new ones—because adaptability is prioritized over stability. This matches the dynamic capabilities mandate to keep evolving an organization's resource base.

   These points illustrate that the velocity and ferocity of future challenges might outpace traditional leadership models. VL is designed to fill that gap, not by discarding leadership's humanity, but by infusing it with warrior-like agility and a technologist's mindset.

Case Studies: Vanguard Leadership in Action

Theory and vision are vital, but seeing VL applied in real organizational contexts is even better. This section presents two case studies from COTRUGLI Business School's CO-LAB initiatives and the HAI5 implementations that show how the elements of VL—dynamic adaptation, AI–human collaboration, and military-grade strategic execution—have led to tangible outcomes. The cases span internal leadership development applications to external consulting and innovation projects, reflecting the versatility of the vanguard model.

Case 1: HAI5—Bridging the Skills Gap and Driving Innovation in the Western Balkans

One of the flagship initiatives embodying VL is the HAI5 Project, spearheaded by Kapusta and his CO-LAB team. HAI5 is a pioneering program that combines AI, blockchain, and Industry 5.0 principles to catalyze sustainable, human-centric innovation in business and society. A telling example of HAI5 in action was presented at a strategic dialogue hosted at the UN House in Brussels in January 2025, focusing on emerging technologies and impact entrepreneurship in the Western Balkans.

   Kapusta (2025) introduced HAI5 as a model for regional transformation, aiming to tackle the critical human capital and innovation gaps in the Western Balkans. The project's design directly reflects VL ideals: It seeks to enhance the integration of emerging technologies in traditional industries, quickly adapting and adopting AI/blockchain into sectors that are generally not tech-forward. This is an example of sensing and seizing opportunities (dynamic capabilities) at a regional scale. It focuses on developing scalable upskilling and reskilling frameworks in line with Industry 5.0, which emphasizes bringing the human touch back into highly automated industries, aligning with VL's view of AI as an augmentation for humans. By training the workforce rapidly in new skills, HAI5 is preemptively preparing organizations for the future, a very vanguard move (anticipate and adapt ahead of the curve). It aligns the region's innovation efforts with EU digital and green transitions, using AI and blockchain for sustainable impact. This shows VL's strategic alignment: not just reacting to tech trends, but using them to advance broader goals (in this case, SDGs and EU priorities).

   The outcomes from HAI5's early implementations are promising. HAI5 effectively created a multi-stakeholder platform involving government agencies, businesses, and academia to collaborate on tech adoption, echoing a battlefield coalition. It has been showcased as a model for bridging the digital skills gap and fostering entrepreneurship in a region that historically lags in high-tech investment. For instance, through HAI5, several pilot projects were launched where local companies partnered with CO-LAB experts to implement AI solutions for process

optimization and blockchain for supply chain transparency. One tangible result is the establishment of mentorship and innovation hubs in multiple countries through CO-LAB's network, wherein HAI5 provides the content and strategy, showcasing quick, adaptive innovation spurred by HAI5 guidance (details beyond the scope here, but reported through CO-LAB channels).

This case exemplifies VL by showing collaborative leadership (CO-LAB) acting as a vanguard for an entire ecosystem. They scanned the environment, identified the chance to leapfrog via AI and blockchain, and orchestrated a response across organizational boundaries. The time from conception to execution was short. Within a year, HAI5 moved from an idea to being presented on international stages and kicking off projects, reflecting the bias for action and iteration. In military analogy, it is like mobilizing an allied task force to secure a strategic advantage before rivals do. The HAI5 case underscores that AI and human capability are force multipliers: it was not just tech thrown at a problem, but human leaders and AI solutions jointly designing new approaches that neither could do alone. HAI5 amplified what a small team could achieve across many organizations by integrating AI and education efforts.

Case 2: AI-Driven HR Transformation—"Art of HR" and CO-LAB's Corporate Impact

Another domain in which VL principles have been demonstrated is in human resources (HR) and organizational operations through CO-LAB's consulting and knowledge-sharing initiatives. On February 13, 2025, COTRUGLI Business School hosted an "Art of HR for the Future of Work" event, gathering chief human resource officers (CHROs) and executives to discuss how technologies like AI, robotics, and blockchain will reshape the workforce (COTRUGLI Business School, 2025). At this event, keynote speaker Mario Brčić presented a vision of HR that epitomizes VL thinking, painting the following scenario: "Imagine a world where lawyers truly think like lawyers, strategists plan strategically, and innovators focus on innovation—while AI takes care of administrative processes" (COTRUGLI Business School, 2025, para. 4). In other words, it frees people from drudgery to perform at their highest human capacity—a classic force multiplier notion. This was not just

imagination; through CO-LAB and HAI5, COTRUGLI Business School has been actively helping organizations realize this vision: CO-LAB's 2,700-member network (comprised of alumni and global experts) has provided companies with AI consulting, education, and strategic guidance, effectively translating AI hype into practical solutions. Rather than just discussing the future, they help shape it by implementing pilot projects.

A key philosophy Brčić shared is that "AI success is not about having the most powerful model but an AI system that can be easily adopted" (COTRUGLI Business School, 2025, "HAI5" section, para. 2). This insight guided the development of HAI5's solutions for businesses—they integrate leading AI models into a simple, business-friendly system addressing real challenges. For instance, one implementation involved deploying a conversational AI assistant in a financial services firm's HR department to handle routine employee inquiries and paperwork (e.g., leave requests, benefits FAQs). The system deliberately kept the interface simple and integrated with tools like email, so adoption was quick. Within a few months, HR staff reported saving significant time (a 30% reduction in time spent on routine queries), which they reallocated to talent development and strategic workforce planning. The AI assistant essentially acted as a new team member that never sleeps, multiplying the output of the HR team.

The event also identified key challenges of the AI revolution that CO-LAB addresses: reduced tech budgets requiring clear ROI, the war for AI talent, and new metrics for AI-era performance. VL comes through in how these are tackled. For example, in response to tight budgets, CO-LAB's approach (and recommendation to leaders) is to pursue "small wins" with AI by implementing low-cost, high-impact automation first to prove value, then scale. This agile, iterative adoption mirrors how a military unit might secure small victories to build momentum.

One notable outcome was how one company's leader applied these principles and saw a cultural shift. One mid-sized Croatian manufacturing firm worked with CO-LAB's HAI5 team to introduce AI in their operations, starting with an AI tool for predictive maintenance on their assembly lines. The vanguard aspect was not just implementation of the tool itself (which predicted machine part failures, reducing

downtime by 20%) but also how leaders engaged with it. The CEO formed a quick-response team (much like a tactical unit) composed of IT staff, line managers, and an external data scientist from CO-LAB. This team was given the autonomy to implement and iterate the AI system over a few months. The CEO—acting as a vanguard leader—flattened the decision process, bypassing some usual bureaucratic approvals to let the team experiment freely (a risk, but one informed by trust in the experts and the need for speed). When the maintenance AI showed positive results, the CEO then rallied the entire workforce around it, not unlike a transformational leader who would celebrate a win, but importantly, he had hard data and a tested prototype in hand. This combination of vision (we will be an AI-driven leader in our sector) with rapid execution (a cross-functional tech team delivering quick results) is quintessential VL. The firm has since expanded AI to inventory management and is training all managers in basic data analytics—an organizational agility boost from that initial vanguard project.

We see from the HR and operations cases that VL encourages leaders to pilot new technologies themselves and lead from the front in adoption. CO-LAB's initiatives provided the sandbox and support, but it required the leaders in those companies to step up and break the mold of "wait and see." The success stories—teams refocusing on strategic work and manufacturing processes, gaining efficiency through AI—were driven by leaders who treated AI as a teammate. They answered the question Brčić pointedly asked at the end of the HR event: "The AI revolution is already here. Will you be a leader or a follower?" (COTRUGLI Business School, 2025, "Key Challenges of the AI Revolution" section, para. 5). Those who lead (embracing AI early and learning its ropes) are ahead of their competitors. Those who are followers or delay their adoption may find themselves scrambling.

Discussion

These case studies build a compelling picture of VL as an actionable and effective model for contemporary and future leadership challenges. In this discussion, we synthesize the insights, highlight the theoretical and practical implications, and emphasize the urgency for leaders to transition toward this model.

VL as a Synthesis of Agility and Purpose

One striking observation is how VL marries the agility of military strategy with the purpose-driven approach of TL. It is not agility for the sake of agility; it uses agility to serve a mission. In the UNIDO workshop description, VL is tethered to achieving the SDGs in an AI-driven world (UNIDO AIM Global Forum, 2024). It shows that it is not merely about competition and survival but also about directing those competitive advantages toward meaningful ends. This suggests that VL can retain normative leadership goals (ethical, sustainable, inclusive outcomes) while employing more aggressive and adaptive means. This duality will be necessary because the future may demand that leaders champion human-centric values in environments that reward efficiency and control. Vanguard leaders must be the ones who can do both—keep organizations morally grounded and highly competitive.

Dynamic Capabilities Realized

Theoretically, the VL model operationalizes dynamic capabilities at the leadership level. Leaders in the two case studies discussed earlier effectively perform the three dynamic capability functions:

- Sensing: recognizing the potential of AI in HR or the need for Industry 5.0 skills;
- Seizing: forming a team to implement an AI pilot and launching the HAI5 program swiftly; and
- Reconfiguring: reshuffling team roles post-AI adoption, creating new partnerships across countries for HAI5.

This confirms that leadership is a critical micro foundation of dynamic capabilities—without a leader championing and orchestrating these moves, organizations often stay inert. VL could thus be seen as a leadership style explicitly designed to enhance an organization's evolutionary fitness. It may be fruitful for academic research to examine how vanguard-style behaviors correlate with measures of dynamic capabilities, such as innovation rate and speed of strategic pivots. Early anecdotal evidence here suggests a strong positive correlation.

Limitations of Traditional Models—Validated

Our comparative analysis pointed out the cracks in TL and SL under extreme conditions, and our cases implicitly validated those points. For instance, consider that none of the case study successes came from just inspiring people with a vision (transformational) or just empowering others and stepping back (servant). In each, leaders had to do something extra. They had to get personally engaged in new tech (which a pure visionary might not) or make an executive call that might have bypassed some voices (which a purely follower-focused leader might hesitate to). This does not invalidate those models universally. There remain contexts in which they work well, but it indicates that a more direct and adaptive style wins in techno-turbulent contexts.

Could a transformational or servant leader have achieved the same outcomes? Possibly, but likely at a slower pace: A transformational leader might have convinced the company to embrace digital innovation, but perhaps years later, after hiring consultants. The vanguard-trained leader did it in months. A servant leader in the HR scenario may have focused on employees' comfort with AI, delaying implementation until everyone was fully convinced. The vanguard leader pushed forward with a pilot to prove the concept, and then people embraced it once the results showed success (addressing their comfort through evidence). Thus, the inadequacy of the older models lies not in their goals but in their speed and directness. VL addresses this by making decisiveness and tech integration core tenets.

AI and Human Synergy—The Force Multiplier Effect

A recurring theme is that AI augments human leadership rather than replaces it. Our case studies showed improved outcomes when AI and human judgment were combined. One could argue that in the foreseeable future, the most successful organizations will be those with centaurs at the helm—borrowing the chess analogy where human–AI teams ("centaurs") outperform humans or AIs alone. VL trains leaders to become centaurs: They leverage AI for data crunching and pattern recognition while applying human intuition, ethics, and creativity to that input. This synergy can dramatically multiply the impact of decisions and strategies. For

example, an AI might highlight a nascent trend in customer behavior; a human leader interprets that in context and swiftly pivots the business strategy to address it. The outcome is far superior to either the leader's intuition alone (which might miss the subtle trend) or an AI system alone (which cannot reorganize a company or inspire a team to execute the new strategy). Ragland (2024) refers to this as "exponential growth, rather than incremental improvement" when describing AI-empowered leadership ("What's Inside the Book" section, no. 1). This force multiplier concept also has another implication: it can level the playing field or exacerbate organizational gaps. Suppose one company's leadership adopts a vanguard approach with AI and another does not. In that case, the former can potentially leap ahead like a small, well-equipped special forces unit, outmaneuvering a larger but outdated army. We already see hints of this in digital-native companies outcompeting older firms. The next few years may amplify that effect to an extreme, so we emphasize a limited window for adaptation.

The Three-Year Window—A Call to Action

This article is a call for urgency. A brief timeline to get ready for a change is not an arbitrary alarmism; it stems from the observable acceleration of AI adoption and the compounding nature of competitive advantage. Suppose AI adoption and capability development are compounding (i.e., those who start earlier not only move ahead but accelerate faster). In that case, leaders who do not pivot now may find that the gap is unbridgeable by 2028. An IBM study (Goldstein, 2023) found that 77% of executives see entry-level jobs are already impacted by generative AI, with rapid intensification expected. This suggests that the workforce and process transformations are happening now, not in some distant future. Within roughly three years, the landscape of skills and organizational structures will look very different. Leaders have these few years as a grace period to reskill themselves and reorganize their leadership approach—adopting AI tools, training their teams, and instilling agility—before the change becomes irreversible.

Moreover, from a geopolitical and economic perspective, we can anticipate possible shocks or shifts (e.g., new regulations such as the EU AI Act or volatile economic cycles) in that timeframe that will separate the prepared from the

unprepared. VL is essentially about being prepared—it is the scout at the vanguard that spots what is coming and enables the main force (organization) to maneuver appropriately. For leaders reading this, the message is clear: start embodying these principles today. Develop dynamic capabilities: read about AI (or better, play with AI tools); flatten your organizational hierarchies to enable faster communication; practice rapid decision-making on smaller projects to build that muscle; and perhaps most importantly, cultivate a network like CO-LAB that can help you exchange knowledge and stay sharp.

Objective Validations and Future Research

It is worth noting that many of the claims made in this article can and should be further validated by empirical research. For instance, measuring organizational performance under leaders who score high on vanguard traits versus those who do not would provide quantitative backing over the next few years. The early anecdotal successes (some of which we cited) point toward better innovation outcomes and responsiveness. Similarly, studying employee outcomes under VL would be important—do employees feel more empowered or stressed? A high-urgency model could risk leading to burnout if not managed well. VL does emphasize resilience, and presumably, that includes preventing burnout (like a soldier must maintain stamina). However, leaders should be cautious to balance urgency with empathy—a point rightly underscored by SL.

Ethical leadership is another dimension. With an autocratic tilt in the environment, vanguard leaders must be careful not to slip into unethical authoritarian behaviors. Maintaining transparency and fairness and using AI ethically (e.g., avoiding bias and respecting privacy) will be tests of true leadership mettle. Those issues should remain front and center; a vanguard leader failing on ethics would be as disastrous as any traditional leader failing, if not more so, because of the amplified effects of tech (e.g., unethical use of AI could cause large-scale harm quickly). Therefore, frameworks like SDG alignment and Industry 5.0's human-centric focus built into CO-LAB's vision act as guardrails to ensure the "highly adaptive warrior" is a warrior for positive outcomes, not just conquest.

Conclusion

The dawn of an AI-dominated, automation-rich era calls for reimagining leadership. Vanguard leadership (VL) emerges as a robust model for this challenge—one that blends the time-tested strategies of military adaptability with the ingenuity of modern innovation practice. Through the lens of the dynamic capabilities theory, we see that organizations led by vanguard principles are better equipped to sense the winds of change, pivot swiftly, and continuously reshape themselves for long-term advantage.

Comparative analysis revealed that while TL and SL have guided organizations well in the past, they risk proving insufficient in a future where change is unrelenting and often unforgiving. Transformational leaders may inspire, but without rapid execution, inspiration alone can flounder in the face of agile competitors. Servant leaders may nurture, but without decisive action, nurturing alone may not fend off existential threats. VL does not discard the values of these models—it propels the vision and care for people, but fortifies them with speed, strategic acuity, and tech empowerment. It represents a leadership evolution as significant as the technologies driving the new era.

Case studies from COTRUGLI's CO-LAB and HAI5 initiatives have demonstrated that vanguard-style leadership is not just theory; it has already yielded real-world results. From a multinational effort to upskill a region's workforce in advanced tech to companies revolutionizing their HR and operational practices with AI to leaders transforming legacy businesses from within—the impact is tangible. These cases validate that AI and human leaders together can achieve feats neither could alone, embodying the force multiplier effect that is so critical to thriving in the modern landscape. Organizations that have embraced these ideas gained efficiency, innovation capacity, and adaptability, often in remarkably short timeframes, giving them a head start in the next industrial revolution.

A key takeaway is the narrow window of opportunity that currently exists. We are in a pivotal moment—akin to the early stage of a high-tech race—in which bold leadership moves can still alter an organization's trajectory. However, that window is closing as AI capabilities proliferate. Leaders likely have only a few years to

fundamentally reskill themselves and retool their organizations. This means investing in understanding AI and automation now, flattening decision-making structures, fostering a culture of experimentation, and building knowledge ecosystems (as CO-LAB exemplifies) to stay ahead. The cost of inaction could be steep: a widening gap between those who adapt and those who do not, potentially leading to the obsolescence of businesses that fail to transform. As Goldstein (2023) aptly noted, "The enterprise of tomorrow may not be able to run with yesterday's talent—and tomorrow's talent may not be able to rely on yesterday's ways of working" (para. 7). By extension, tomorrow's organizations cannot rely on yesterday's leading methods.

In conclusion, VL provides a compelling and comprehensive roadmap for the journey ahead. It urges leaders to be as dynamic as the world around them—to become, in effect, the vanguard for their organizations in navigating the uncertain terrain of the future. By internalizing the lessons from military agility, leveraging the power of AI, and holding fast to a vision of human-centered progress, vanguard leaders can guide their teams through the fog of the coming war for innovation and impact. Kapusta's (2025) thesis and its manifestation in initiatives such as HAI5 have shown that this model is not only aspirational but practical and already in motion. The onus is now on current and emerging leaders to heed the call. The next few years will likely separate the pioneers from the followers, the vanguard from the laggards. As we stand at this inflection point in leadership evolution, the question for every leader is: Will you lead from the vanguard or be left behind?

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Business as Warfare:
A Tactical Playbook for Modern Leadership[*]

Zrinko Petener

This article examines the evolving intersection of modern military doctrine and corporate leadership through the vanguard leadership framework (VLF) lens. It asserts that in today's volatile global markets, the principles that drive success in asymmetric warfare—real-time intelligence, agility, and technological force multipliers—are equally essential for sustained competitive advantage. Drawing from contemporary business cases, military strategy, and AI innovation, the article outlines how decision-makers can adopt a warfare mindset to catalyze transformation. The urgency for a three-year adoption window is underscored, framing VLF not as an optional enhancement, but as an imperative for survival.

Keywords: AI innovation, case studies, vanguard leadership, vanguard leadership framework, warfare

Modern business is now unequivocally a battlefield. The disruption curve steepens by the day, and industry leaders are no longer solely affected by resource deficits, but by strategic inertia. Executive complacency has become a silent killer, with the average S&P 500 tenure down to less than 18 years from 61 years in 1958 (Kelleher & Koller, 2023). Strategic leadership must now be forged in the crucible of urgency and unpredictability. This article offers a tactical playbook drawn from advanced military doctrine and adapted through the vanguard leadership framework (VLF)—a paradigm that integrates dynamic strategy, asymmetric tactics, and AI-powered intelligence. In this context, corporate leaders are no longer mere managers but commanding officers navigating terrain marked by uncertainty, volatility, and opportunity.

The New Business Battlefield: Compete with a Warfare Mindset

Today's economic environment mirrors a dynamic combat zone. With digitization and globalization compressing the distance between a challenger and an incumbent, market dominance has become transient. The fall of giant companies

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like Blockbuster to Netflix (Dalton & Logan, 2024) exemplifies asymmetric disruption. Visionary leaders must cultivate a vigilant, proactive, and fluid warfare mindset. As in battle, situational awareness becomes paramount. Strategic leadership means defending current positions while orchestrating offensive maneuvers into unclaimed terrain. Every choice is a maneuver; every product launch is a strategic strike. The VLF elevates leadership from reactive execution to precision-targeted operations premised on intelligence and speed.

Dynamic and Asymmetric Tactics for Competitive Advantage

Asymmetric warfare has taught us that dominance is not defined by scale, but by speed, surprise, and superior strategy. The VLF codifies this through four imperatives.

- **Know Your Enemy (and Yourself):** Sun Tzu's (5th century BC/2007) dictum is operationalized through competitive intelligence. Executives must synthesize internal capability audits live data feeds on rival strategies and market signals.
- **Speed and Agility:** Decision velocity becomes a strategic differentiator. Bezos' 70% rule (Amazon Staff, 2017) reinforces the premise that momentum, not perfection, secures victory. VLF empowers decentralized command structures, reducing drag and increasing responsiveness.
- **Surprise and Innovation:** Strategic innovation mirrors tactical flanking. Whether deploying an AI product into a stagnant industry or redesigning a value chain, surprise compels opponents to react on your terms.
- **Force Multipliers:** AI, automation, and analytics amplify finite resources. VLF mandates the systemic deployment of such multipliers to magnify strategic output and disrupt with precision.

These tactics embed a proactive, adaptive ethos in an organization's strategic DNA, enabling disproportionate impact—even against better-funded adversaries.

AI-Powered Competitive Intelligence: The Executive's Secret Weapon

Intelligence has always been decisive in warfare. In business, its digitized form—AI-powered competitive intelligence—revolutionizes strategic foresight. By parsing

vast data ecosystems, AI tools provide real-time pattern recognition and predictive insights, which enhance all of the following.

- **Proactivity:** Leaders receive early warning indicators, enabling preemptive maneuvers.
- **ROI Optimization:** AI directs capital toward data-validated opportunities, reducing speculative missteps.
- **Organizational Alignment:** Intelligence dashboards unify cross-functional responses, mimicking battlefield synchronization.
- **Cultural Reinforcement:** A culture of data-driven vigilance permeates the ranks, aligning everyday execution with strategic imperatives.

VLF positions AI intelligence as shield and sword; it mitigates risk and guides precise strikes.

High-Velocity Leadership: Speed, Agility, and Adaptation

Leadership in the VLF model prioritizes operational tempo. Drawing from the OODA loop doctrine, organizations are trained to observe, orient, decide, and act with cyclic precision. High-velocity leadership manifests through three methods.

- **Decentralized Command:** Empowering front-line managers with authority accelerates execution.
- **Rapid Iteration:** Decision loops shrink as feedback systems work in real time.
- **Pre-Rehearsed Responses:** Scenario war-gaming ensures immediate readiness in emergent situations.

This capability transforms businesses from slow-moving bureaucracies into agile, mission-ready units. The velocity of decision-making and alignment across echelons constitutes an unassailable advantage.

Adapt or Be Obsolete: The Urgency for Action

The three-year horizon marks an inflection point. Rao (2024) notes that according to the U.S. Bureau of Labor Statistics, only about one-third of private businesses survive for a decade. Obsolescence is the penalty for strategic delay. Case evidence underscores the principle of adaptability for survival.

- **Failure to Adapt:** Kodak and Nokia are cautionary tales of innovation aversion.
- **Adaptive Victory:** Netflix and Microsoft exemplify proactive transformation through reinvention.

VLF demands institutional readiness: the capacity to identify, adapt, and exploit before rivals. It reframes transformation as a constant, not an initiative.

Conclusion: Lead the Charge—A Call to Action

Business-as-warfare is not a metaphor; it is an operational reality. The vanguard leadership framework offers a doctrine for survival and dominance. Executives must act now: audit intelligence infrastructure, decentralize authority, and institutionalize rapid adaptation. The mindset shift is foundational. When leaders embrace strategic urgency, empowered execution, and relentless innovation, the organization becomes a weapon of strategic consequence. The clock is ticking. This is the moment to lead the charge, outmaneuver the competition, and redefine the theater of modern business warfare. Victory belongs to the bold.

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Leading with AI: How to Blend Human Judgment with Machine Intelligence for Superior Decision-Making[***]

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This article proposes a framework to help leaders to determine when to utilize artificial intelligence (AI), rely on human insights, or combine the two to optimize decision-making. It presents the relative effectiveness of AI and human judgment at each decision level—strategic, operational, and tactical—and recommendations on how to combine them for the best results. By aligning roles to these strengths, leaders can enhance efficiency and accuracy in their organizations. As organizations integrate AI with human judgment, however, effective change management becomes crucial to success. Leaders must adopt a dynamic and proactive approach to integrating AI into their workflows. Essential steps include continual review and updating, customization and adaptation, training and development, and ethical and compliance monitoring. Leaders who adeptly balance human insight and AI's capabilities can achieve unprecedented accuracy and foresight in their strategies.

Keywords: artificial intelligence, decision-making, human judgment, intelligence, leading

In an era in which artificial intelligence (AI) reshapes industries by turning vast datasets into predictive insights (see Figure 1 for adoption rates), the unique value of human intuition becomes a key question for today's leaders. They find themselves at a strategic crossroads: Should they lean on the time-tested wisdom of human judgment, or embrace the transformative potential of AI in navigating a fast-paced business environment? This article addresses this critical junction, proposing a clear framework for when to utilize AI, rely on human insights, or synergize to optimize decision-making.

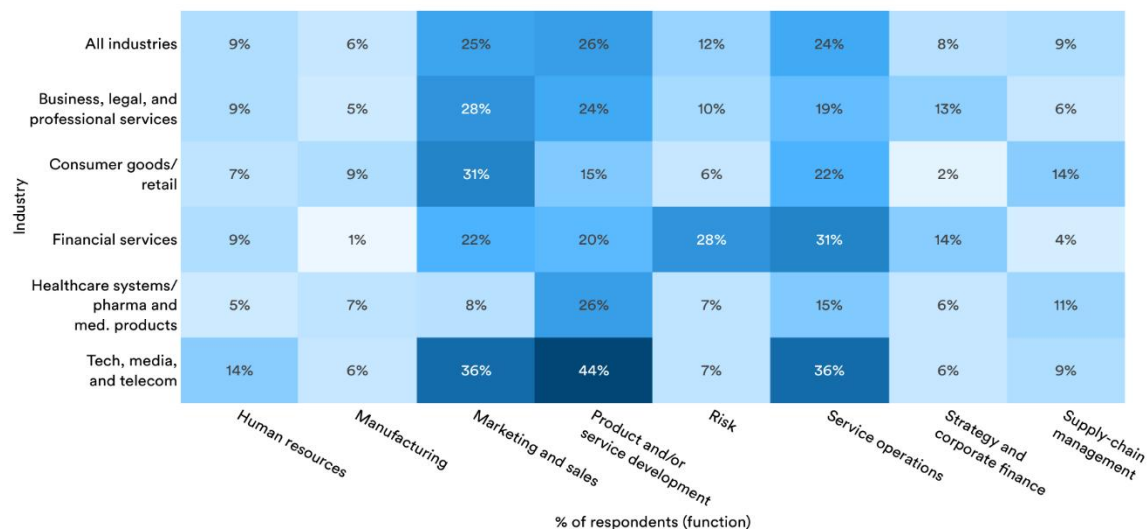|	Human resources	Manufacturing	Marketing and sales	Product and/or service development	Risk	Service operations	Strategy and corporate finance	Supply-chain management
All industries	9%	6%	25%	26%	12%	24%	8%	9%
Business, legal, and professional services	9%	5%	28%	24%	10%	19%	13%	6%
Consumer goods/ retail	7%	9%	31%	15%	6%	22%	2%	14%
Financial services	9%	1%	22%	20%	28%	31%	14%	4%
Healthcare systems/ pharma and med. products	5%	7%	8%	26%	7%	15%	6%	11%
Tech, media, and telecom	14%	6%	36%	44%	7%	36%	6%	9%

% of respondents (function)

Figure 1. AI adoption by industry and function in 2023. From "The State of AI in 2023: Generative AI's Breakout Year," by QuantumBlack AI, by McKinsey, 2023, McKinsey & Company, pp. 3–4 (https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2023-generative-ais-breakout-year#/). Copyright 2023 by McKinsey & Company.

The Transformative Power of Analytics: A "Moneyball" Perspective

The story of *Moneyball* (Lewis, 2003) is a compelling illustration of analytics in action. In 2002, the Oakland A's baseball team, which had one of the lowest payrolls in Major League Baseball, used data-driven strategies to win the American League West division title. This approach is not confined to sports; in the financial world, firms like Renaissance Technologies (n.d.) employ supercomputers and extensive datasets to execute high-stakes automated trades, yielding significant returns over decades.

The Role of Human Judgment in Unpredictable Domains

Areas fraught with unpredictability, such as geopolitical forecasting and complex business trend analysis, often require a more nuanced touch of human judgment. Experts at Control Risks, a global specialist risk consultancy, consistently outperform AI models in navigating the intricate dynamics of global changes. Collective intelligence methods like prediction markets and the Delphi method further enhance human judgment, proving invaluable for strategic decision-making and addressing complex issues that require broad consensus. Similarly, in matters of national and international import, leaders rely on collective intelligence—from

teams of advisors and experts—to make informed and balanced decisions that minimize the risk of biased or poorly informed outcomes.

Human Judgment and AI in Handling Ethical and Emotional Complexities

In areas deeply intertwined with ethics, emotional intelligence, and social nuances, human judgment remains irreplaceable. For example, in medical practice, while AI can suggest treatments based on clinical data, physicians must consider psychological, familial, and social factors to tailor their approaches to individual patients' needs—demonstrating the limitations of AI in contexts that demand empathy and a profound understanding of human conditions.

Contrasting Human Judgment and AI Models

Human Judgment

Human judgment is characterized by intuition, experience, flexibility, and depth, making it indispensable in scenarios that require nuanced understanding and ethical deliberation. It is particularly adept at integrative thinking, navigating ambiguous situations, and resolving moral dilemmas. Human judgment thrives in complex social interactions in which data may be lacking or incomplete, leveraging a deep contextual awareness that AI cannot replicate.

Artificial Intelligence (AI)

AI refers to systems that use mathematical algorithms and extensive datasets to predict outcomes, serving as a formidable tool in data-driven decision-making. These models excel in processing and analyzing vast volumes of data swiftly, offering unbiased predictions based on available data. AI's strength lies in its ability to handle tasks that benefit from speed and consistency, making it invaluable for routine data-intensive operations.

Summary Comparison

Table 1 outlines the distinct capabilities and applications of human judgment and AI, highlighting their respective strengths and limitations across various decision-making criteria.

Table 1: Effectiveness Comparison of Human Judgment and AI Across Different Decision Criteria

Decision Criteria	Human Judgment	AI
Data Volume	Low: Better suited for strategic interpretation rather than raw analysis.	High: Excellent at handling large datasets and identifying patterns.
Repeatability/Consistency	Low: Good for oversight, but not matching models in routine tasks.	High: Automation and efficient processing
Speed of Decision	Low/Medium: Depending on the complexity of the problem, it ranges from seconds/minutes to months	High: Microseconds to seconds
Cost Efficiency	Medium: Efficient in low regime	High: Economies of scale
Complexity of Task	Medium: Accommodates to multi-contextuality, limited for large scale	Medium: Great for complexity by scale, limited for context dependencies
Accuracy in Uncertain Situations	High: Applies a deep understanding of dynamics and human factors.	Medium: Deals with uncertainty based on historical data.
Adaptability to New Scenarios	High: Quickly adapts to new information and changes in context.	Medium: Can adapt but requires retraining or fine-tuning.
Need for Nuance	High: Excels in interpreting and responding to subtle and complex aspects of information, essential in contexts requiring deep understanding and empathy.	Low/Medium: Struggles to fully comprehend and respond to subtle nuances and complexities without explicit training.
Ethical Considerations	High: Essential for decisions involving ethics and corporate values.	Low: Struggles with nuances of ethics and morality. Limited by predefined ethical frameworks and unable to assess complex moral values independently.
Innovation and Creative Strategy	High: Critical for breakthrough thinking and strategic innovation. Human creativity drives innovation beyond data-driven patterns, essential in fields like marketing strategies and product development.	Low: Generates ideas based on data patterns but lacks true creativity.

There is an evident complementarity between the two, as each excels under different criteria.
Best Use Case: Human judgment for ethical decisions and complex social contexts; AI for data-intensive and high-speed analyses.

Strategically Allocating Human and AI Resources

Decision-making dynamics shift profoundly as we move from operational to strategic levels. In operational settings, decisions are often data-driven, best suited for AI's rapid processing capabilities. As we ascend to strategic decision-making, the demands intensify—the decisions carry more weight, involve complex ethical considerations, and have far-reaching consequences. This transition underscores the escalating need for nuanced human insight, particularly in scenarios that require a blend of ethical judgment, long-term vision, and deep contextual understanding.

Table 2 delineates the effectiveness of human judgment versus AI across different decision-making levels, illustrating how their roles evolve from tactical to strategic applications. It guides leaders on how to best leverage each approach to enhance decision-making efficacy across the organization.

Table 2: Effectiveness of AI and Human Judgment at Each Decision Level and Recommendations on How to Combine Them for the Best Effect

Decision Level	AI Utilization	Human Judgment Role	Recommended Action
Strategic	Low: Provides broad insights through data analysis and scenario planning support.	High: Essential for setting long-term goals, interpreting market dynamics, and making decisions that require a deep understanding of business context and ethical considerations.	Use AI to inform and support strategic planning with data and scenarios. Rely predominantly on executive judgment to make final strategic decisions, integrating AI insights with broader business understanding and ethical considerations.
Tactical	Medium: Useful for providing detailed analyses, forecasts, and options for consideration.	High: Necessary for selecting among options, considering short-term impacts, and aligning tactical moves with strategic goals.	Deploy AI to generate actionable options and perform risk assessments. Human managers should evaluate AI recommendations, make decisions considering operational realities and imminent business needs, and ensure alignment with the overall strategy.
Operational	High: Ideal for automating routine decisions, optimizing processes, and handling large volumes of operational data efficiently.	Medium: Supervisory role to oversee AI operations, handle exceptions, and make decisions that require human intervention.	Implement AI extensively to manage day-to-day operations and decision-making processes. Use human oversight to monitor AI performance, handle complex issues that require human intervention, and ensure that AI operations align with tactical and strategic objectives.

Based on the insights drawn from our comparative analysis (see Table 1), strategic decision-making typically benefits more from human judgment, especially when ethical considerations, long-term implications, and complex human dynamics are at play. Conversely, AI excels in environments in which decisions

depend heavily on data analysis, such as operational and some tactical scenarios. For instance:

- **Human Judgment Prevails**
  - when ethical or moral dilemmas demand a depth of understanding that goes beyond data, such as in policy-making or judicial decisions.
  - in situations requiring a synthesis of complex social nuances or when navigating crises, where data alone is insufficient.

- **AI Dominates**
  - in making high-frequency operational decisions when speed and precision are paramount, such as inventory management or real-time analytics.
  - in making tactical decisions that benefit from deep data analysis, ensuring consistency and reducing human error.

Integrating Human and AI Strengths

Rather than choosing between human judgment and AI, the most effective strategy often involves their integration, leveraging each for their strengths. The World Economic Forum found that even in job functions highly exposed to automation, most tasks benefit from integrating the strengths of both humans and AI (see Figure 2; "Jobs of Tomorrow," 2023). Furthermore, generative and agent-based AI technologies are poised to significantly enhance the impact on performance and productivity when combined with human capabilities.
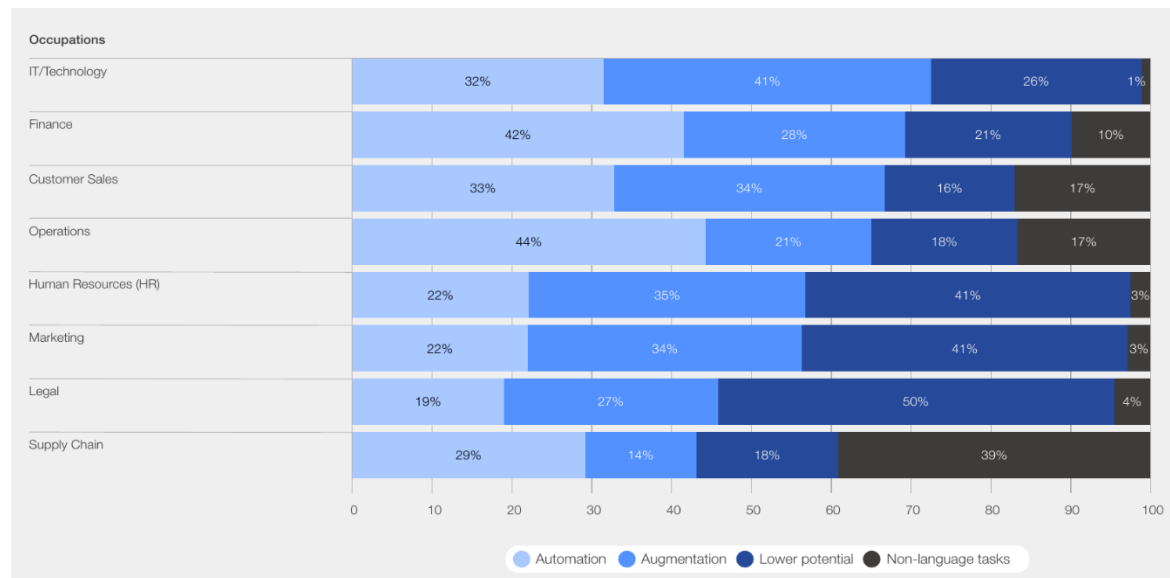
Figure 2. Job function groups with the highest exposures to automation and augmentation. From "Jobs of Tomorrow: Large Language Models and Jobs," 2023, World Economic Forum, p. 16 (https://www3.weforum.org/docs/WEF_Jobs_of_Tomorrow_Generative_AI_2023.pdf). Copyright 2023 by the World Economic Forum.

The detailed analysis in Table 1 highlights the distinct strengths of human judgment and AI, but also provides a foundational guide for how they can be used effectively to complement each other. Using this data, leaders can strategically allocate roles based on decision-making criteria, ensuring that both AI and human capacities are optimized.

Defining Roles According to Decision Criteria

The decision criteria outlined in Table 1—such as data volume handling, speed of decision, and ethical considerations—serve as benchmarks for assigning responsibilities. For example, complex decision environments, such as medical diagnostics, benefit from AI's initial analytical capabilities, complemented by human judgment for final decisions. In strategic contexts like configuring dynamic pricing, AI can provide data-driven insights, while human oversight ensures these align with broader ethical and business goals. By aligning roles to these strengths, organizations can enhance efficiency and accuracy in their operations.

Setting Interfaces for Interaction

Creating straightforward interfaces for AI and human collaboration is crucial. These interfaces should be designed to facilitate easy access to AI-generated data and insights. This can include dashboards that display AI analyses in real-time or alert systems that notify human operators when human oversight is required. Effective interface design ensures that AI tools are accessible and functional within the human-driven decision-making framework.

The Importance of AI Explainability

As AI takes on more complex roles, the importance of explainability grows. Explainable AI systems enable decision-makers to understand and trust the insights provided by AI, which is crucial for their integration into higher-stakes decision-making areas. Implementing AI solutions that prioritize explainability will ensure that AI-generated recommendations are transparent, fostering greater confidence and smoother cooperation between AI systems and human users.

Explainability and interpretability facilitate the integration of AI with human judgment, and they also elevate the levels of decision-making achievable by these combined forces. By enhancing the transparency of AI systems, we equip decision-makers with the tools to understand and validate the reasoning behind AI-generated recommendations. This level of clarity is paramount for extending the reach and depth of decision-making into more complex, ambiguous, and strategic areas previously limited by the capacities of human cognition and conventional data analysis methods alone.

Improved explainability in AI systems allows for a richer, more nuanced interplay between human intuition and automated insights, pushing the boundaries of what can be achieved in decision-making frameworks. This approach enables organizations to transcend traditional limitations, fostering a new era of strategic agility and informed, innovative decision-making that leverages the unique strengths of both human and artificial intelligence.

Parallel Implementation of Change Management

As these roles and interfaces are defined and implemented, change management initiatives must run in parallel to address and mitigate any disruptions. These initiatives should focus on training and development to build AI literacy across the workforce, along with communication strategies that keep all stakeholders informed about how AI technologies are being used and the benefits they bring. Engaging with employees early and often helps to align their perspectives with the new technology integration, securing their support and smoothing the transition.

By systematically analyzing decision-making criteria and aligning roles and interfaces accordingly, leaders can create a robust framework that maximizes the strengths of both AI and human judgment. The parallel implementation of change management ensures that this integration meets technical requirements and aligns with organizational culture and employee expectations, paving the way for a successful transformation.

The Role of Change Management in AI Integration

As organizations integrate AI with human judgment, effective change management becomes crucial to success. The introduction of AI technologies often entails significant shifts in workflows, roles, and responsibilities, which can be met with resistance if not managed properly. Change management plays a pivotal role in ensuring that these transitions are smooth and that all stakeholders are aligned and committed to the new ways of working.

Effective change management strategies should focus on clear communication, education, and inclusive participation. Leaders must clearly articulate the reasons behind AI integration, the expected benefits, and any changes in job roles or processes. Providing comprehensive training and continuous support helps demystify AI technologies, reducing fear and building competency across the organization. Moreover, involving employees in the planning and implementation phases can foster a sense of ownership and acceptance. By encouraging feedback and addressing concerns, organizations can adjust their approaches in real time, enhancing the adaptability and resilience of their teams.

Ultimately, change management ensures that the adoption of AI enhances rather than disrupts the workflow, leading to improved decision-making capabilities and maintaining morale and productivity. This strategic focus on the human aspects of AI integration not only optimizes the technological investments but also preserves and enriches the organization's cultural dynamics, making the transition as beneficial as it is transformative.

Current Limitations and the Evolving Role of AI

Challenges and Opportunities in AI Utilization

AI's current limitations, such as its struggles with trade-offs, causal reasoning, ethical considerations, adaptability to unforeseen situations, and handling of nuanced or ambiguous data, critically influence the integration of AI with human judgment. These challenges are most pronounced when AI must move beyond mere data interpretation—for instance, in assessing the trustworthiness of data sources, the correctness of the underlying criteria, and identifying what is conspicuously absent from the data. Here, human judgment is indispensable, providing the necessary context and depth that AI lacks.

However, as AI technologies rapidly advance, these limitations are being addressed more effectively (see Figure 3). Some of the promising advancements are happening in deep learning architectures, diffusion models, explainable and causal AI, federated learning, homomorphic encryption, and next-generation hardware solutions like edge computing, photonic, and quantum computing.
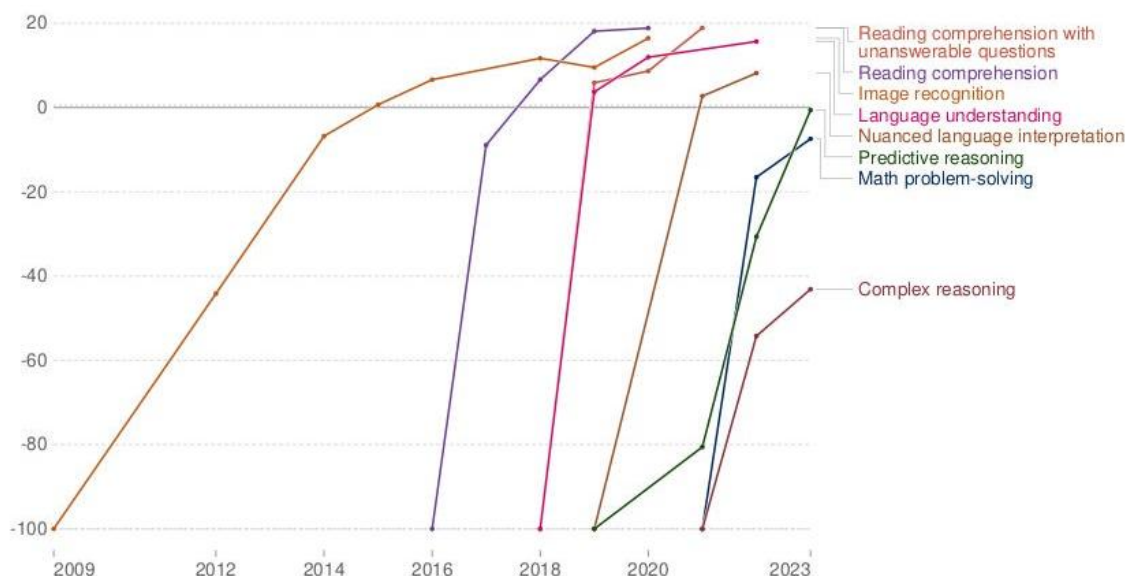
Figure 3. Rapid advances of AI on capability benchmarks with respect to humans. Note: For each capability, the first year shows a baseline of -100, even if better performance was recorded later that year. The baseline of human performance is set to zero. When the AI's performance crosses the zero line, it scores more points than humans. From "Plotting Progress in AI," by D. Kiela, T. Thrush, K. Ethayarajh, and A. Singh, 2023, Contextual AI Blog, (https://ourworldindata.org/grapher/test-scores-ai-capabilities-relative-human-performance#sources-and-processing).

   Figure 4 shows some of these areas positioned in relation to other critical technologies that will also influence decision-making. Absolute performance on benchmarks paints the general-case performance too optimistically, but this figure does show trends of progress that transfer to broader applications than ever before. The future of AI is not just about handling data, but also about making higher-level strategic decisions previously reserved for human experts. This evolution suggests a shift in how we prepare our decision-making frameworks to incorporate AI more comprehensively.
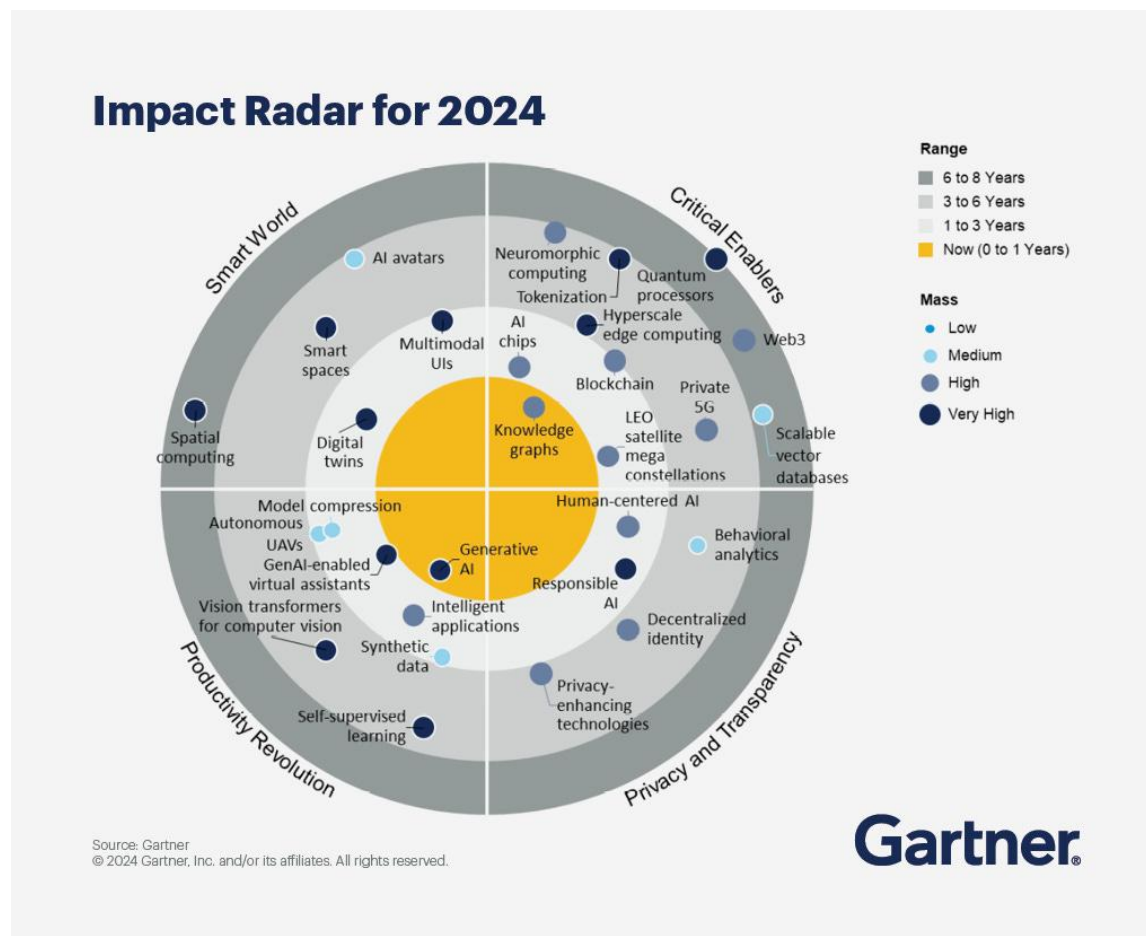
Figure 4. Impactful technologies on the horizon. From "30 Emerging Technologies That Will Guide Your Business Decisions," 2024, Gartner (https://www.gartner.com/en/articles/30-emerging-technologies-that-will-guide-your-business-decisions). Copyright 2024 by Gartner.

Strategic Integration and Continuous Improvement

To leverage these technological advancements effectively, leaders must adopt a dynamic and proactive approach to integrating AI within their decision-making frameworks. Essential steps include continual review and updating, customization and adaptation, training and development, and ethical and compliance monitoring.

Continual Review and Updating

It is crucial to stay abreast of the latest AI developments, focusing particularly on rapidly evolving fields like generative and agent-based AI. Regularly update your decision-making frameworks to reflect cutting-edge research and practical applications tailored to your sector.

Customization and Adaptation

Adapt the AI decision matrix to align with the unique requirements of your industry and your organization's specific strategies. The diverse capabilities of AI mean that its application should be finely tuned to the context of sectors such as finance, healthcare, and manufacturing, ensuring that the technology serves the intended strategic purposes.

Training and Development

Foster a culture of continuous learning for both your AI systems and personnel. Understanding the evolving functionalities of AI and related ethical considerations is fundamental. This enhances the synergy between your team and the AI tools and also boosts the overall effectiveness of your strategies.

Ethical and Compliance Monitoring

Implement stringent oversight mechanisms to ensure that all AI deployments comply with ethical standards and legal requirements. This oversight is essential, not just for mitigating risks, but also for preserving the integrity and trustworthiness of your AI applications.

By actively engaging in these areas, leaders can leverage AI to refine decision-making processes and maintain a competitive edge. Integrating the latest AI technologies into your strategic frameworks is crucial for staying at the forefront of industry innovations and meeting the challenges of a rapidly evolving marketplace.

Conclusion

The convergence of human judgment and artificial intelligence marks a transformative era in leadership decision-making. Although the current limitations of AI necessitate a measured approach, the rapid evolution of this technology is set to revolutionize our decision-making frameworks. Leaders who adeptly balance human insight and AI's capabilities can achieve unprecedented accuracy and foresight in their strategies.

The advanced development of generative and agent-based AI systems is progressively dismantling the barriers once imposed by technology. This progress

heralds a future in which the integration of human and machine intelligence is not just seamless but also fundamentally enhances our decision-making capacity. The most effective strategies blend data-driven AI models with the nuanced understanding of human judgment and the broader perspectives provided by collective intelligence. This synergy amplifies three crucial dimensions of intelligence—artificial, human, and collective—to navigate complex global markets more effectively.

Looking forward, every leader must commit to continuously enhancing their understanding and application of AI. This means keeping abreast of technological advances and proactively fostering an organizational culture that values ethical integrity and creative problem-solving. This guide aims to serve as both a blueprint for today's decision-makers and a foundation for tomorrow's innovations. As leaders step forward into this dynamic future, they should leverage the combined power of AI and human intelligence to lead with vision and confidence, crafting strategies that are as forward-thinking as they are grounded in ethical practices.

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The Rise of Agentic AI: How Autonomous Intelligence Will Transform Business[*]

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This article explores agentic AI—autonomous systems that make decisions and perform complex tasks with minimal human oversight. Unlike generative AI, which responds to specific commands, agentic AI proactively identifies and carries out steps to achieve defined objectives through goal-oriented autonomy, adaptive learning, and tool utilization. Agentic AI is poised to fundamentally change organizational structures by flattening hierarchies and enabling "enterprises of one," where individual entrepreneurs can compete with larger corporations using specialized AI agents. The article examines industry transformations in healthcare, financial services, and retail, highlighting a shift from reactive to anticipatory business models. Key implementation challenges include security concerns, workforce transition strategies, and AI governance frameworks. The article emphasizes that for successful deployment, agentic AI should be seen as complementary to human capabilities, with humans taking on roles in strategic guidance, ethical oversight, and creative problem-solving. Organizations that achieve optimal collaboration between humans and AI will gain the greatest competitive advantages in this emerging landscape.

Keywords: agentic AI, artificial intelligence, business transformation, intelligence, organization structures, technology

In the rapidly changing landscape of artificial intelligence (AI), we are on the brink of a new frontier: agentic AI. While businesses have only begun to adapt to the revolutionary effects of generative AI tools like ChatGPT, this next wave of technology promises even more significant transformations. Unlike its predecessors, agentic AI does not just respond to commands or generate content; it actively makes decisions and performs complex tasks with minimal human oversight. For business leaders, understanding and preparing for this shift is not just important, it is urgent. It is essential for staying informed and for fundamentally rethinking organizational structures, workflows, and competitive advantages.

Beyond Generation to Action: Understanding Agentic Systems

The progression of AI capabilities in business settings follows a clear evolutionary path. Traditional AI systems, mainstreaming around 2015, excelled at prediction and classification tasks using machine learning algorithms. By 2023, generative AI had captured global attention with its ability to create human-like content from simple prompts. Now, agentic AI represents the next leap forward.

To understand the distinctions, consider planning a company conference.

- With traditional AI, you would require separate systems to analyze attendee data, recommend venues, and process registrations, each needing specific programming.

- With generative AI, you could brainstorm agendas and create marketing copy and presentation outlines, but you would still need to implement everything.

- With agentic AI, you could specify your objectives, budget, and parameters. The system would then research venues, negotiate with vendors, create and distribute marketing materials, manage registrations, and adjust plans based on real-time developments.

What makes agentic AI transformative is its combination of three critical capabilities.

- *Goal-oriented autonomy:* Unlike reactive systems that wait for instructions, agentic AI proactively identifies and executes steps to achieve defined objectives. Instead of human users actively engaging with generative AI to reach their goals, users provide the goals to the AI agents, which then work to achieve them.

- *Adaptive learning:* These systems continuously refine their approaches based on outcomes, becoming more effective with each interaction. Over time, AI agents will improve at handling tasks to achieve the designated goals.

- *Tool utilization:* Agentic AI can employ various digital "tools" to accomplish tasks, from accessing databases to controlling other software. AI agents can also be organized as a workforce, meaning an AI agent can instruct other AI agents to work together harmoniously.

As shown in Figure 1, many AI agents follow these steps to achieve their objectives: perceive, reason, act, learn, and orchestrate. The AI agent observes conditions, determines appropriate responses, executes actions, evaluates results, and adjusts accordingly within a continuous improvement loop. With the ability to access and use various tools, agentic AI orchestrates workflows that involve more complicated and complex tasks.
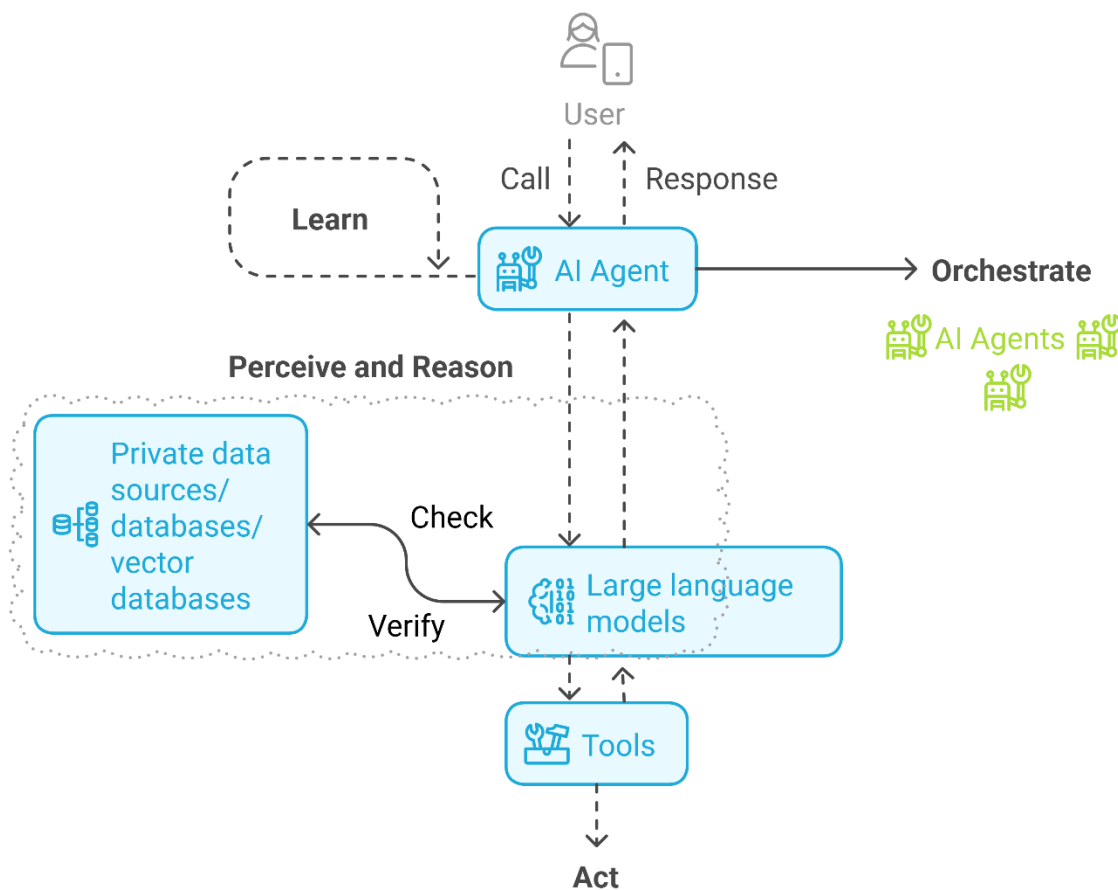

Figure 1. Agentic AI workflow

The Business Impact: Reimagining Organizational Structure

The implications for business operations extend far beyond simple efficiency gains. As agentic AI matures, we will most likely witness structural changes within organizations that challenge traditional assumptions about team composition and departmental boundaries.

Flattening Hierarchies and Redefining Teams

The traditional management pyramid may become obsolete as agentic AI coordinates routine operations. Middle management roles focused on information processing and task distribution could be particularly affected. Instead, organizations might evolve toward flatter structures where human employees concentrate primarily on strategic direction, creative problem-solving, and relationship management. Business functions will also change. According to Nvidia CEO Jensen Huang in January 2025, "the IT department of every company is going to be the HR department of AI agents in the future" (Ray, 2025, para. 4). This observation points to a broader trend: departments throughout organizations will likely transform into hybrid human–AI teams, with employees shifting toward roles that involve guiding, supervising, and collaborating with increasingly capable AI systems.

Micro-Enterprise Proliferation

Extending the above logic, we could see many company departments becoming a "department of one." Indeed, the idea of the "department of one" could further evolve into what might be called "enterprises of one"—businesses where a single entrepreneur uses multiple specialized AI agents to provide services that would typically require a larger workforce today. This development could significantly change the competitive landscape across various industries, enabling smaller, more agile companies to compete against established corporations. Furthermore, this shift may alter start-up funding models. Entrepreneurs may no longer need to raise substantial capital before launching their businesses, as they can now operate complex enterprises with an AI-powered workforce.

Industry Transformations: Beyond Efficiency to Reinvention

The impact of agentic AI will vary significantly across sectors, with some experiencing incremental improvements while others undergo complete reinvention.

Healthcare: Personalized Care Coordination

AI agents could transform patient care by functioning as virtual healthcare coordinators. These systems would monitor patient data continuously, schedule appropriate follow-ups, ensure medication compliance, and alert human providers to concerning developments. For chronic disease management, an AI agent might track a diabetic patient's glucose readings, dietary patterns, and medication adherence, then automatically adjust care recommendations and notify providers based on emerging patterns. Unlike today's passive monitoring systems, agentic AI would take initiative, perhaps ordering prescription refills before they run out, scheduling transportation for patients who miss appointments due to mobility issues, or proactively suggesting specialist consultations based on symptom patterns.

Financial Services: Dynamic Risk Management

Financial institutions are already deploying aspects of agentic AI for compliance and risk management. Traditional approaches to loan monitoring involve periodic reviews at predetermined intervals. In contrast, an agentic system could continuously evaluate loan portfolios by assessing not only standard financial metrics but also integrating alternative data sources such as news events, social media sentiment, and environmental indicators. At Nexus FrontierTech, we use agentic AI techniques to assist lending teams at global banks in collecting and analyzing environmental and sustainability data. This enables them to more efficiently approve new loans and monitor existing ones in real time. AI agents can also enhance compliance and regulatory analysis, such as evaluating transactions flagged for sanctions.

Retail: Anticipatory Commerce

Through agentic AI implementation, retail could evolve from reactive to anticipatory models. Rather than simply responding to customer orders or queries, AI agents could proactively manage inventory, personalize promotions, and even predict individual customer needs. Imagine a retailer whose AI system notices that a customer typically purchases outdoor equipment seasonally. Rather than waiting for the customer to initiate contact, the system could prepare personalized

recommendations, verify inventory availability, arrange preferred delivery options, and generate a tailored offer—all before the customer even begins shopping. When the customer does engage, they encounter an experience that feels remarkably prescient. A recent report found that 51% of surveyed IT executives believe that increasing customer responsiveness would be a benefit of adopting agentic AI (Davenport & Barkin, 2025).

Operational Transformation: The New Workflows

Beyond industry-specific applications, agentic AI will reshape core business functions through entirely new workflow paradigms.

From Linear to Networked Processes

Traditional business processes largely follow linear workflows, with tasks completed sequentially and handoffs between departments creating potential bottlenecks. Agentic AI facilitates a shift to networked processes where multiple tasks proceed simultaneously, with AI agents coordinating their activities and adapting to changing circumstances without human intervention. For example, in product development, an agentic system could manage user research, prototype creation, testing, and regulatory compliance preparation simultaneously—continuously sharing insights across these parallel workstreams and adjusting priorities based on emerging findings.

Continuous Operations

The 9-to-5 workday becomes increasingly irrelevant as agentic AI facilitates continuous business operations. Customer support inquiries, inventory management, financial reconciliation, and other processes can proceed uninterrupted, with human involvement required only for exception handling or strategic decisions. This shift to continuous operations provides significant advantages for global businesses, eliminating the delays traditionally associated with time zone differences and handoffs between regional teams.

The Human Element: Complementary Intelligence

Despite these transformative capabilities, agentic AI does not eliminate the need for human involvement. Instead, it alters the nature of human contribution, emphasizing one of the most important success factors in unlocking business value through AI—the "human in the loop" that complements uniquely human capabilities with AI efficiency.

Strategic Guidance and Ethical Oversight

At the most fundamental level, human leaders are essential for defining organizational objectives, establishing ethical boundaries, and providing strategic direction. AI agents can optimize defined goals but cannot determine what those goals should be, particularly when it comes to complex human values and societal needs. Organizations must develop governance frameworks that clearly delineate which decisions remain exclusively human and which can be delegated to AI systems. These frameworks must address efficiency considerations along with issues of accountability, transparency, and alignment with organizational values. Guidelines and guardrails are becoming increasingly critical as AI has reached a point of development where it can scheme or even deliberately deceive. ("AI Models Can Learn to Conceal," 2025).

Creative Problem-Solving and Innovation

While agentic AI excels at optimization within defined parameters, breakthrough innovation often requires conceptual leaps and cross-domain insights that remain distinctly human strengths. The most successful organizations will likely be those that effectively combine AI-driven operational excellence with human-led creative exploration. This complementary approach might be manifested as human teams establishing innovation directions and conceptual frameworks, with AI agents then exploring potential solutions, identifying viable approaches, and handling implementation details.

Implementation Challenges: Beyond the Technology

The path to effective agentic AI deployment involves challenges that extend well beyond the technology.

Security and System Integrity

As AI agents gain greater autonomy and access to organizational systems, security concerns become increasingly critical. Organizations must implement robust safeguards against both external manipulation and potential system malfunctions. Unlike traditional security models focused primarily on preventing unauthorized access, agentic AI security must also address scenarios where authorized systems behave unexpectedly. This demands sophisticated monitoring mechanisms to detect subtle deviations from intended behaviors caused by external sinister forces.

Workforce Transition

Perhaps the most significant implementation challenge involves workforce transition. While agentic AI will open up new opportunities, it will also render specific roles obsolete, potentially at a pace that exceeds natural attrition. Organizations need comprehensive strategies for

- identifying which roles will be most affected and over what timeframe,
- creating pathways for employees to transition to higher-value roles,
- developing training programs that emphasize distinctly human capabilities, and
- establishing new organizational structures that will optimize human–AI collaboration.

A successful transition requires not just technical preparation but also cultural change. It involves helping employees understand how their contributions will evolve and remain valuable in an AI-augmented workplace.

The Path Forward: Strategic Preparation

For business leaders, preparing for the agentic AI revolution requires a multifaceted approach that balances experimentation with pragmatic implementation.

Start With Process Analysis

Before implementing agentic AI solutions, organizations should thoroughly analyze their current processes, identifying not just inefficiencies but also decision points, dependencies, and exception scenarios. This analysis provides the foundation for determining where agentic systems can deliver maximum value and how they should interface with human decision-makers.

Develop AI Governance Frameworks

Establishing clear governance principles before widespread implementation helps ensure that agentic AI deployment aligns with organizational values and risk tolerance. These frameworks should address questions of decision authority, transparency requirements, performance metrics, and intervention protocols.

Foster AI Literacy Throughout the Organization

As AI capabilities expand, basic AI literacy becomes increasingly important throughout the organization. Leaders should invest in educational programs that help employees at all levels understand AI capabilities, limitations, and appropriate use cases. This knowledge enables more effective human–AI collaboration and reduces resistance based on misunderstanding or unfounded concerns. A recent McKinsey survey revealed that nearly half of the employees in companies surveyed say they want more formal training and believe it is the best way to boost AI adoption (Mayer et al., 2025).

Conclusion: The Collaborative Future

The rise of agentic AI marks a significant shift in technology and fundamentally changes how work is performed and how organizations create value. Unlike previous waves of automation that primarily impacted routine physical tasks, agentic AI transforms knowledge work, decision-making processes, and coordination functions that traditionally relied on human intelligence.

This transformation presents tremendous opportunities for organizations that adopt a strategic approach. It can enhance operational efficiency, improve customer experience, accelerate innovation, and create entirely new business

models. However, to realize these benefits, organizations must implement agentic AI thoughtfully, viewing it not as a replacement for human contributions, but as a powerful complement.

The most successful organizations in the era of agentic AI will be those that effectively blend human creativity, judgment, and empathy with AI-driven efficiency, consistency, and scalability. This collaborative approach emphasizes that agentic AI's true potential lies in eliminating human involvement and enhancing it, allowing us to focus on our uniquely human strengths.

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The Energy and Water Footprint of Generative AI: A Vanguard Leadership Perspective[*]

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The rapid proliferation of generative artificial intelligence (AI) and large language models (LLMs) has ushered in a transformative era for industries. However, it imposes substantial environmental costs through energy and water consumption. This article, grounded in the vanguard leadership framework (VLF), examines the resource demands of generative AI, focusing on energy and water usage, efficiency comparisons among LLMs, and regional implications in Europe, the United States, and Asia. It contrasts AI's environmental footprint with Bitcoin mining and proposes strategic solutions to mitigate additional energy demands, aligning with the VLF's adaptive principles. By integrating real-time data, academic insights, and industry trends, the article underscores the urgent need for leaders to harness AI as a force multiplier while navigating its ecological and economic challenges within a three-year window to maintain competitive advantage in Industry 5.0.

Keywords: artificial intelligence, Bitcoin, consumption, disruptive technology, energy, Industry 5.0, LLM (large language models), technology, vanguard leadership framework

Generative artificial intelligence (AI), powered by large language models (LLMs), redefines organizational capabilities, enabling unprecedented innovation. However, its environmental footprint—marked by significant energy and water consumption—poses a challenge for sustainable adoption. The International Energy Agency (IEA) projects that data center electricity demand, mainly AI-driven, is set to more than double by 2030, reaching nearly 1,000 TWh, equivalent to Japan's current annual electricity consumption (IEA, 2024b). This situation demands immediate attention and action. Concurrently, water usage for cooling these data centers exacerbates resource scarcity, with global leaders like Google reporting a 20% increase in water consumption from 2021 to 2022 (Berreby, 2024). In a VUCA (volatility, uncertainty, complexity, and ambiguity) environment, vanguard leadership plays a crucial role in addressing these challenges. Leaders need to sense these challenges, seize technological opportunities, and transform operations to align with Industry 5.0's human-centric, sustainable ethos. This

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article addresses six critical questions to dissect AI's resource demands and propose actionable solutions, integrating the VLF's adaptive principles to ensure organizational resilience.

Methods

This article synthesizes peer-reviewed literature, industry reports, and real-time web data (up to April 2025) accessed via advanced search capabilities. It leverages COTRUGLI Business School's CO-LAB mentorship network for case studies, focusing on AI-driven transformations, and incorporates vendor data from platforms like OpenAI and Anthropic. The analysis employs a comparative framework to evaluate LLM efficiency, regional energy dynamics, and Bitcoin mining parallels.

Findings and Discussion

Energy Consumption of Generative AI

Generative AI's energy demands stem from computationally intensive training and inference phases. Training a model like GPT-3 requires approximately 1,287 MWh, equivalent to the annual energy consumption of 123 U.S. households (de Vries, 2023). Inference, the operational phase, is increasingly significant, with a single ChatGPT query consuming about 0.3 Wh, which is 10 times that of a Google search (Leffer, 2024). By 2027, AI could account for 85 to 134 TWh annually, rivaling the electricity consumption of small nations like the Netherlands (de Vries, 2024). The IEA (2024a) forecasts that AI, alongside cryptocurrency mining, could double data center energy use to nearly 1,000 TWh by 2026, representing 3.5% of global electricity demand. VLF leaders must sense this escalating demand and seize opportunities to optimize energy use, leveraging AI's productivity gains to offset costs.

Water Consumption of Generative AI

Water is a critical resource for cooling data centers, with evaporative cooling systems contributing to significant consumption. In 2022, Google's data centers

used 5 billion gallons of fresh water, a 20% increase from the previous year, while Microsoft reported a 34% rise (Berreby, 2024). A 2023 study estimated that 10 to 50 ChatGPT queries consume about 0.5 liters of water, though recent analyses suggest this may be underestimated by a factor of four (Luccioni, 2024). Data center water use has sparked protests in water-stressed regions like Chile, highlighting social and environmental risks. The VLF's emphasis on strategic foresight compels leaders to mitigate these impacts by integrating water-efficient cooling technologies like closed-loop systems.

Energy and Water Use for Specific LLM Tasks

To quantify resource use for practical tasks, we analyzed ChatGPT (GPT-4o) and Llama 3.1 for writing an email (500 words) and an essay (1,500 words).

- *Email (500 words, about 1,000 tokens):* ChatGPT consumes about 0.3 Wh per query, with water use of about 0.01 liters (based on 2 L/kWh for cooling) (Leffer, 2024). Llama 3.1, an open-source model, uses about 0.2 Wh when locally hosted, with similar water demands but enhanced privacy, aligning with the VLF's focus on data sovereignty (Replicate, 2025).
- *Essay (1,500 words, about 3,000 tokens):* ChatGPT requires about 0.9 Wh and 0.03 liters of water, while Llama 3.1 consumes about 0.6 Wh and 0.02 liters, benefiting from optimized inference (Ren et al., 2024).

Comparing LLM Energy Efficiency

Energy efficiency varies across LLMs based on model architecture, hardware, and optimization.

GPT-4o. This model consumes about 0.3 Wh per 1,000-token query, leveraging NVIDIA's Blackwell GPUs for 25 times better efficiency than predecessors (OpenAI, 2025).

Claude 3.5. This model uses about 0.4 Wh per query, excelling in coding tasks but limited by cloud-only deployment (Anthropic, 2025).

Llama 3.1. This model achieves about 0.2 Wh per query when locally hosted, ideal for privacy-sensitive applications (Replicate, 2025).

Mixtral 8x22B. This model consumes about 0.15 Wh per 1,000-token query, optimized for efficiency via sparse Mixture-of-Experts architecture but with a smaller context window (Mistral AI, 2024; Khan et al., 2025).

Low-energy LLMs are achievable through:

Algorithmic Optimization. Techniques like quantization reduce computational load by up to 50% (Ren et al., 2024).

Smaller Models. Domain-specific models (e.g., 7B parameters) can consume up to 10 times less energy than general-purpose LLMs due to fewer parameters and optimized architectures (Ren et al., 2024).

Hardware Advances. NVIDIA's GB200 Superchip enhances inference efficiency, aligning with the VLF's sense-and-seize ethos (Harris, 2024).

VLF leaders should prioritize open-source models like Llama for cost-effective, secure deployments, as demonstrated by a CO-LAB case study in which local hosting reduced energy costs by 40% for a financial firm (Režun, 2025).

Regional Energy Demands

AI's energy demands strain regional grids, with unique challenges in Europe, the United States, and Asia.

Europe (2025 Outages). Electricity outages in April 2025, driven by renewable intermittency and AI-driven data center growth (24 TWh in 2023, with about 15% from AI), underscore grid vulnerabilities (IEA, 2024). The European Union's AI Act mandates energy reporting, but demand could double by 2030 (Shah, 2024).

United States. AI-driven data centers consumed 176 TWh in 2023, about 4.4% of national electricity, with AI accounting for roughly 15% of this demand (IEA, 2024b). By 2030, U.S. data center consumption is projected to increase by 130% to 240 TWh, driven primarily by AI, straining grids in concentrated clusters like Virginia (IEA, 2024b). Grid upgrades lag behind, risking delays for 20% of planned centers (Shehabi et al., 2024).

Asia. China's coal-heavy grid fuels AI data centers, contributing to 2% of global emissions (Hebous & Vernon-Lin, 2024).

Globally. Data center power demand, significantly driven by AI, is projected by the IEA to more than double by 2030, and operators are exploring alternative power sources like nuclear technologies to meet this need (Kemene et al., 2024).

Solutions

Renewable Integration. Solar and wind power with grid storage reduce emissions, but will require $1 trillion in global investment by 2030 (IEA, 2024).

Liquid Cooling. Closed-loop systems cut water use by 50%, though upfront costs are high (about $500,000 per data center; Buckley, 2024).

Load Shifting. Scheduling AI training during off-peak hours optimizes grid stability, saving 20% in energy costs (Ren et al., 2024; Biswas et al., 2024).

Economic and Environmental Implications. Renewable resource adoption raises energy prices by 10 to 15%, impacting consumers, but efficient AI boosts productivity, and is expected to increase global output by 0.5% annually through 2030 (Bogmans et al., 2025). Environmentally, green AI reduces CO_2 emissions by 20% compared to fossil-fuel-powered data centers (Harris, 2024).

AI vs. Bitcoin Mining Energy Consumption

Bitcoin mining consumed close to 130 TWh in 2023 and is projected to reach 160 TWh by 2026, compared to AI's 7.3 TWh (2023) and potential 73 TWh by 2026 (de Vries, 2024). Bitcoin's proof-of-work mechanism generates about 81 million tons of CO_2 annually, while AI's productive applications (e.g., climate modeling) offer societal benefits (Hebous & Vernon-Lin, 2024). However, AI's inference phase scales with user demand, potentially surpassing Bitcoin if unchecked.

Conclusion

Generative AI's energy and water demands present both challenge and opportunity for vanguard leadership. LLMs like GPT-4o and Llama 3.1 consume significant resources for tasks like email and essay writing, but optimized models and local hosting offer efficiency gains. Regional energy crises, exemplified by Europe's 2025 outages, necessitate renewable integration and advanced cooling, while AI's footprint remains smaller but more dynamic than Bitcoin mining.

Vanguard leadership's adaptive framework empowers leaders to sense these challenges, seize technological advancements, and transform operations within a three-year window to lead Industry 5.0. Leaders can ensure resilience, competitiveness, and sustainability in an AI-driven future by mastering AI as a force multiplier.

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PERSPECTIVE

The Strategist's New Copilot:
Embracing AI Without Surrendering the Wheel[***]

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Throughout history, leaders have relied on experience, intuition, and human analysis to frame problems and imagine the future. With the growth of artificial intelligence (AI) in strategy work, however, it is time to recognize human limitations, e.g., finite knowledge and personal biases, and embrace the capabilities AI systems can offer. It is also important to recognize the hidden perils of overreliance on these systems, such as cognitive dependency, confirmation bias amplification, and strategic homogenization. Leaders should embrace the idea that AI systems are our copilots, not our replacements, and use strategic foresight to orchestrate human–machine thinking as a team sport while keeping their eye wide open for potential risks.

Keywords: artificial intelligence, cocreating, leader, partner, strategy

The Boardroom Has a New Voice

Imagine a CEO in a high-stakes boardroom meeting. On one side, her top lieutenants sift through market reports and decades of experience. On the other side, an artificial intelligence (AI) system quietly analyzes millions of data points, ready to suggest bold moves or flag hidden risks. This is not a scene from science fiction or some far-off future—it is happening today. A silent, but major revolution in how companies make big decisions is underway. AI is no longer just crunching numbers behind the scenes; it is sitting at the strategy table, whispering insights into executives' ears. The question is, how should we listen?

The arrival of AI as a strategy copilot comes with tremendous promise. It also comes with a warning label. As someone who has watched executives grapple with this new dynamic, I believe we are at an inflection point: Leaders can elevate their strategic thinking to new heights by working *with* AI, or they can inadvertently undermine their judgment by leaning on it too much. The key is to embrace our new digital advisor as an interpretive partner—one that can challenge and expand our thinking—without relinquishing our own strategic instincts.

Beyond Human-Only Strategy

For centuries, *strategic cognition*—the mental process of making sense of complex business challenges and charting a course forward—was a human-only domain. Leaders relied on experience, intuition, and human analysis to frame problems and imagine the future. This traditional approach has its limits: our brains, brilliant as they are, are bound by personal biases and finite information. Now, enter AI, armed with vast datasets and pattern-finding prowess. It is as if strategists have gained a new lens that can zoom out farther and drill down deeper than humanly possible.

What does this mean in practice? In the past, a strategy session might revolve around a handful of scenarios that the team could conceive. Today, AI can generate dozens of alternative scenarios in seconds, some that would never have occurred to even the most creative human manager. The strategic playing field suddenly widens—more options, more angles, more "what if" explorations. A marketing executive, for example, might use an AI tool to simulate how different customer segments could react to a new product. In doing so, she uncovers not just the obvious markets her team expected, but also "weak signal" opportunities—niche demographics or emerging trends that barely registered on the human radar. The human strategists and the AI are, in effect, *cocreating* a richer understanding of the landscape.

Crucially, this is not just a one-shot input from AI. We are seeing a shift from linear decision-making ("give me the data, I'll make a decision") to an iterative dialogue between human and machine. An executive might ask an AI tool for an analysis of a potential merger, get a range of synthesized insights, then reconsider

her assumptions and ask new questions. In turn, the AI tool refines its output based on the revised framing. In these recursive loops, strategy formulation becomes a back-and-forth process—a sociotechnical dance of sorts—with each side (human and AI) prompting the other to think again, think broader, think deeper. The mental model of the leader is not just her own anymore; it is being continually stretched and honed by this external intelligence. The best strategists will use this to their advantage, recognizing that *beyond the old human-only framing lies a hybrid mode of strategic thinking* that can be more adaptive and far-seeing than what we could achieve alone.

AI as a Thought Partner, Not an Autopilot

With AI's growing presence in strategy work, one thing must be made crystal clear: these systems are our colleagues, not our replacements. The true promise of AI in executive decision-making is not about handing over the reins to a robot overlord that makes all the tough calls. It is about having a tireless, unbiased brainstorm partner who can surface contradictions in our plans, simulate alternative futures, and prod us to consider possibilities we would otherwise ignore. In other words, AI works best as a thought partner that challenges us—a copilot—rather than an autopilot that we mindlessly obey.

Consider how some innovative companies are already leveraging AI in strategy. Instead of asking an AI tool, "What should we do next year?" and blindly executing whatever answer pops out, savvy leaders pose questions like, "What might we be missing in our understanding of customer behavior?" or "Simulate how our supply chain could be disrupted under these conditions." The AI that responds with "Have you considered this outlier scenario?" or "Here's an unusual pattern in customer data that merits a closer look" is invaluable. It is poking at the strategy, testing its resilience. It might even contradict the team's prevailing view, which is exactly what you want from a competent advisor. Just as a good deputy will speak up if their boss is overlooking a critical fact, a good AI partner will highlight inconvenient truths or novel ideas.

When executives treat AI outputs not as final verdicts but as fresh inputs, the whole strategic cognition process evolves. Leaders report that when AI is framed as an assistive tool rather than a magic oracle, their confidence in their own judgments rises. Why? Because they have been able to debate and validate ideas with the help of the AI. It is akin to having a super-intelligent sounding board. If an AI analysis independently arrives at a similar conclusion to yours, you gain confidence that you are on the right track. If it does not, you gain the opportunity to investigate why and potentially discover a blind spot. Some CEOs even describe these AI interactions as "thinking out loud" and catching their flawed assumptions before those assumptions catch up with them. The net effect, when done right, is better decisions—more creative, well-vetted, future-savvy strategies, born from the synthesis of human judgment and machine insight.

The Hidden Perils of an AI-Augmented Mindset

As exhilarating as this human–AI partnership can be, it carries hidden dangers that boardrooms and C-suites ignore at their peril. The very qualities that make AI a powerful strategic ally have flip sides that can turn it into a strategic crutch. If executives are not careful, the copilot can lull us into letting our hands slip off the wheel. Three risks stand out: cognitive dependency, confirmation bias amplification, and strategic homogenization.

Losing Our Strategic Muscle (Cognitive Dependency). There is a fine line between trusting a copilot and dozing off at the controls. The first risk is growing too dependent on AI to do our thinking for us. If decision-makers increasingly outsource their sensemaking to algorithms, they may exercise their own strategic faculties less. Over time, much like a seasoned pilot who relies too heavily on autopilot and starts losing his edge, executives could see their strategic intuition and critical thinking "muscles" atrophy. For instance, if an AI tool consistently provides well-structured strategic options at the push of a button, a manager might skip doing their own homework and simply choose from the menu the tool provides. It is efficient, yes—but also dangerous. The manager risks becoming blind to options the AI tool did not present, and they may not notice when the context shifts in ways the AI tool isn't proficient. In extreme cases, an organization

could become so AI-reliant that when the system fails or spits out a flawed recommendation (and no AI tool is infallible), the humans are too out of practice to catch the error in time. The cautionary tale here is clear: Use the AI's gifts, but continue to exercise independent judgment. Treat AI-generated insights as suggestions, not gospel. Just as importantly, keep honing your team's strategic thinking skills so they stay sharp in an AI-enhanced environment.

Echo Chambers of Algorithmic Bias (Confirmation Bias Amplification). The second risk is more insidious. We all know humans tend to favor information that confirms our preexisting beliefs. Now imagine having an extremely persuasive, data-driven assistant who tends to do the same, but cloaks it under a veneer of objectivity. AI systems learn from historical data and from the prompts we give them. If we are not careful, they can end up telling us exactly what we want to hear—and making it sound like the unbiased truth. An executive might unconsciously phrase a question to an AI tool in a leading way ("Find evidence that our Strategy X is viable"), and lo and behold, the AI tool delivers a comprehensive report affirming X with cherry-picked data. Even without intentional prompts, many AI models, trained on business texts and past success stories, could reinforce conventional wisdom. If most of the data suggests that "Strategy A" has worked for companies in the past, the AI tool may also favor Strategy A in its suggestions. This creates a confirmation feedback loop: managers see their preferred strategy echoed back by a supposedly impartial machine and become more confident in it, discounting dissenting information. It is confirmation bias on steroids—the comfortable echo chamber now has a fancy AI sound system. Breaking out of this requires deliberate effort. Leaders must encourage their AI tools to *disagree* with them by asking contrarian questions ("Why might Strategy X be flawed? Give me evidence against it."). Diversifying the training data and perspectives fed to AI can also help ensure it does not just parrot the dominant perspective. Above all, executives need to remain humble and curious, actively seeking viewpoints that challenge the AI tool's conclusions—and their own.

The Strategy Hall of Mirrors (Strategic Homogenization). The third risk goes beyond any one firm—it is a potential pitfall for entire industries. As AI strategy

assistants become ubiquitous, many will draw from the same pools of data and use similar algorithms. The danger is that companies could start to converge on the *same* strategies because their AI tools are all giving similar advice. In the quest for the optimal path, everyone might inadvertently end up on the same well-trodden path. Think about it: if every competitor's AI is trained on best-selling case studies, market data, and each other's moves, they may all identify the same "winning" move at once. What happens to competitive advantage when everyone's strategy begins to look alike? We risk a kind of institutional groupthink, supercharged by technology. In the 1980s, executives used to say "no one gets fired for buying IBM"—the safe, standard choice. In the 2020s, will we hear "no one gets fired for following the AI recommendation"? The irony is rich: Tools meant to enhance creative thinking could lead us into a herd mentality, where bold differentiation gives way to algorithmic conformity. To avoid this, companies should cultivate their unique context and insights as part of the strategic process. Use AI to inform and inspire, but do not allow it to flatten the nuance of your organization's identity and vision. Maintain a healthy skepticism: if the AI tool's answer sounds suspiciously similar to what everyone else is doing, that is a prompt for *you* to dig deeper or take a different perspective.

Designing a Wise Human–AI Partnership

If you are a CEO or organizational designer reading this, you might be feeling a mix of excitement and caution—and rightly so. The implications of AI-augmented strategy are profound. To harness the promise while mitigating the pitfalls, leaders must be intentional about how they and their teams work with these tools. This is not a simple plug-and-play technology adoption; it is a cultural and cognitive shift in how we make decisions.

First, set the tone that AI is a partner in exploration, not the boss. Frame its role explicitly: It is there to broaden thinking, provide rapid analysis, and offer creative provocations, but the leadership team remains the ultimate sense-maker and decision-maker. When rolling out AI tools for strategy, communicate to your people that the goal is not to find a machine-generated answer to rubber-stamp. The goal

is to uncover insights and options we could not see on our own. Some companies are establishing internal "AI challenger" roles—team members tasked with using AI to poke holes in plans and generate alternatives, ensuring that the human team's ideas are thoroughly tested. This kind of process makes it clear that AI's contributions are welcome inputs, not instructions.

Second, invest in AI literacy and critical thinking in tandem. It is not enough for executives to know how to query a tool; they must also sharpen their ability to interpret and question its output. This might mean training programs highlighting common AI biases and limitations, so that when your AI strategy assistant spews out an analysis, your team can say, "Wait, is this overlooking something or slanting a certain way?" Encourage a culture where asking "How did the AI come up with that?" is second nature. Transparency in AI systems—having some understanding of the data sources or logic—can greatly aid this. If the AI is a black box, treat its answers with extra caution and double-checks. In a sense, strategic decision-making in the AI era will require being as skeptical as we are curious.

Finally, guard your company's strategic uniqueness. This means sometimes going against the grain of algorithmic advice, especially if it drives everyone toward the same obvious conclusion. Use your distinctly human qualities—intuition, values, creative vision—as the counterbalance to AI's data-driven analysis. AI might tell you what *is*, based on the past and present, but only you can define what *ought* to be for your organization. The executives who will thrive in the coming years are those who can fuse AI's strengths with human judgment, without falling captive to the machine's perspective. They will treat strategy formulation as a never-ending dialogue—a recursive loop of hypothesizing, testing with AI, re-hypothesizing, and so on—all while keeping their organization's mission and originality firmly in sight.

A New Era of Sensemaking—With Eyes Wide Open

We stand at a fascinating crossroads. The evolution of strategic cognition beyond human-only framing is creating opportunities to make sense of business complexity in ways previously unimaginable. With AI as an ever-watchful ally,

executives can peer around corners into the future, test assumptions in a virtual sandbox, and iterate toward decisions with more confidence and creativity. The visionary promise here is nothing short of a more enlightened form of corporate strategizing—one that is adaptive, evidence-informed, and imaginative.

But achieving that vision requires wisdom and restraint. It requires resisting the temptations of easy answers and remaining vigilant about the subtle ways technology can skew our thinking. Leaders must foster a relationship with AI that is both an enthusiastic and healthy skeptic. Think of it like a seasoned pilot using a cutting-edge navigation system: she trusts it to help chart the course through turbulent skies, but she also knows when to grab the controls if something looks off.

The future of strategy will not belong to AI systems *alone*, nor to old-school executives who go on gut instinct *alone*, but to those who can bring out the best in both. Strategic foresight will become a team sport between human and machine. As a decision-maker, your role is evolving—you are no longer just the thinker, but also the orchestrator of human–machine thinking. Embrace that role with optimism, but keep your eyes open to the risks. By doing so, you ensure that in this new era of augmented sensemaking, it is humans—with our creativity, ethics, and vision—who set the destination, even as we welcome AI to help navigate the journey.

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PEDAGOGY

Momentary Followership: The Role of the Follower in the Cocreation of Leadership[*]

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While leadership has long been viewed as something that a leader does to others to influence them to achieve a goal, leadership scholars now view leadership as a complex system that includes leaders, followers, and the context. This shift, combined with early writings on followership, has resulted in a growing awareness and study of the important role of followers. While Chaleff (1995) and Kelley (1998) pioneered the study of follower approaches, additional models have been proposed and the research on followership has expanded. As a result of the growing emphasis on followership, some leadership researchers have begun to explore leadership as being cocreated by leaders and followers as opposed to being performed by leaders. Consequently, theorists have examined leadership as a process that can be enacted by leaders as they share leadership, pool leadership at the top, share leadership across levels, or produce leadership through interaction. This pedagogy piece describes a workshop approach to exploring how leaders and followers collaborate to cocreate leadership by inviting participants to reflect on how their approach to following contributes to the leadership that emerges in the relationship between the leader and follower.

Keywords: cocreation, leadership, matrix model, momentary followership, workshop

In the past decade, research on the importance of followership has proliferated significantly. The traditional paradigm of followers as passive receptors of a leader's influence is fading as people become increasingly aware of the significance followers bring to the leadership processes. Indeed, it is becoming increasingly clear that leadership is not as much about what a leader does to a follower as it is about what a leader and follower cocreate through their interaction. Nonetheless, very little research has explored how leadership and followership relate to one another as part of this cocreation process. This article explores the nature of this interaction based on the concept of momentary leadership and proposes a matrix model for thinking about how followership contributes to the cocreation of leadership. A workshop approach for helping followers think about

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how to influence the leader–follower relationship is presented that can be used in classrooms and training sessions.

Momentary Leadership

While the great man theory and its paradigm of leadership as something that a leader does to others to influence them to achieve a goal has dominated the study of leadership for over a century (Spector, 2016), researchers and practitioners are beginning to view leadership in more complex ways. Beginning with the contingency models of leadership, theorists began to view leadership as more dependent on the interaction between leaders, followers, and the context (Ayman, 2004). This awareness gave birth to the study of followership. Kelley (1998) was among the first to write specifically about followership and proposed a model for followership that identified a follower's style or approach based on the follower's levels of independence and activity. Chaleff (1995) took an alternative approach, based on the notion that followers needed to serve as a check and balance on leadership by being willing to courageously stand up to and challenge leaders. He suggested that follower styles could be based on the willingness of followers to both support and challenge a leader. At the end of the 20th century, Bennis (1999) wrote an article that went so far as to suggest that the traditional model of leadership was a myth, that top-down leadership was maladaptive and dangerous, and that "exemplary leadership and organizational change are impossible without the full inclusion, initiatives and cooperation of followers" (74). Kellerman (2007) expanded on these ideas and proposed her own model of followership, largely based on the engagement levels of followers. She then went on to advocate for an end to the dominant paradigm of leadership (Kellerman, 2012) and a shift toward thinking about leadership as a system based on the relationship between the leader, the follower, and the context (Kellerman, 2016). Additional models have been proposed, and the research on followership has expanded significantly (Carsten et al., 2018; Cunha et al., 2013; Howell & Mendez, 2008; Kupers, 2007; Latour, 2004; Matshoba-Ramuedzisi et al., 2022; Uhl-Bien et al., 2014).

As a result of the growing emphasis on followership, some leadership researchers have begun to explore leadership as being cocreated by leaders and followers as opposed to being performed by leaders. Consequently, some theorists have examined leadership as a process that can be enacted by leaders as they share leadership, pool leadership at the top, share leadership across levels, or produce leadership through interaction (Denis et al., 2012; DeRue & Ashford, 2010; Fairhurst & Connaughton, 2014; Komives et al., 2009; Uhl-Bien, 2006; Uhl-Bien & Marion, 2009; Wheatley, 1999, 2007; Wood, 2005). These models of leadership help, but they have "failed to achieve the kind of paradigm shift that is needed" (McClellan, 2021, 129). McClellan has argued that "what is needed is a model that recognizes the emergent reality of leadership while honoring the reality of individuals as influencers, without centering on them" (130). Such an approach would need to "take into consideration that leadership is constantly bi- or multi-directional, informed by hierarchy but not hierarchy-dependent, momentary in nature, symbolic and creative, dependent on adaptation for success, more intuitive than rational, and process- and relationship-dependent" (132–133).

McClellan (2021) then outlined a model of momentary leadership based on the idea that leadership happens in time-bound moments

> when individuals influence one another to achieve a goal or goals within a specific context for a limited time, the context of which is, at least partially, dependent upon the context that proceeded it and influenced by the expectation of those who will follow. (134)

He then proposed a matrix for thinking about the different types of leadership that emerge. The matrix was based on the approach to decision-making and the motive or goal of the leader. It is worth noting, however, that this was proposed as only one potential matrix; other matrices could be developed based on different ways of looking at and classifying leadership. Nonetheless, the idea of the matrix was to facilitate thinking about the nature of momentary leadership and to help leaders reflect on the kind of leadership they are creating from moment to moment. This matrix-oriented approach, however, is particularly valuable if one wishes to examine how followers and leaders cocreate leadership.

In an article exploring servant-followership, McClellan (2022) suggested that while he did not "examine the contributions of the leader and the follower to the emergence of these different forms of leadership" (126), these are nonetheless important. He goes on to give an example of how authoritarian leadership is most likely to emerge when a leader contributes a power-oriented motive and autocratic decision-making process, and the follower accepts this form of leadership and accepts the autocratic process out of a sense of duty, fear, or some other motive. Thus, some forms of followership facilitate certain forms of leadership while not facilitating others.

Based on this idea, McClellan's (2021) matrix approach can be expanded to examine the types of followership that support different approaches to leadership and facilitate reflection and research on how different follower and leader approaches might mutually interact to cocreate different forms of leadership. To this end, consider the following expanded version of McClellan's matrix (see Figure 1).

	Democratic	Participative	Autocratic
Power Goal	Political Leadership: Leadership involves managing the perceptions of sufficient followers to persuade them to choose to empower the leader with authority.	Populist Leadership: Leadership involves listening to followers to understand their needs and creating the perception that those needs will be responded to by the leader, which allows the leader to retain power.	Authoritarian Leadership: Leadership involves using formal or informal positional authority to direct followers' actions without concern for the will of followers to maintain power.
Achievement Goal-Personal	Manipulative Leadership: Leadership involves participating with followers in developing shared goals and then working with followers to develop and enact a plan to achieve goals.	Transformational Leadership: Leadership involves listening to followers' needs and aligning individual needs with organizational objectives to create shared goals and challenging and supporting followers to achieve shared goals.	Sales Director Leadership: Leadership involves the leader convincing followers that what benefits the leader is in the best interest of the followers.
Achievement Goal-Shared	Adaptive Leadership: Leadership involves participating with followers in developing shared goals and then working with followers to develop and enact a plan to achieve goals.	Transformational Leadership: Leadership involves listening to followers needs and aligning individual needs with organizational objectives to create shared goals and challenging and supporting followers to achieve shared goals.	Technical Leadership: Leadership involves enacting plans developed by the leader to achieve shared goals.
Affiliation Goal	Accommodating Leadership: Leadership involves listening to followers to understand their wants and needs and then allowing them to determine how to achieve those needs to keep followers happy and maintain influence. Little concern is given to achieving goals.	Compromising Leadership: Leadership involves listening to followers to understand their wants and needs and then negotiating and compromising with them to respond to these needs while achieving some goals.	Charismatic Leadership: Leadership involves using charismatic influence to make others feel inspired, happy with, and connected to the leader to allow the leader to act on their behalf. In exchange, the leader strives to take actions that satisfy people's wants and needs.
Service Goal	Facilitated Leadership: Leadership involves facilitating group processes to help followers identify needs and develop their own plans to grow individually, achieve collective goals, create a mutually supportive culture, and benefit others.	Servant Leadership: Leadership involves listening to followers to understand their needs and taking their input to create plans and processes that support follower growth, collective goal achievement, a culture of mutual caring, and service to others.	Paternalistic Leadership: Leadership involves determining what is in the best interest of followers, based on the leader's perception, and then developing plans and processes that support follower growth, collective goal achievement, a culture of mutual caring, and service to others.

Figure 1. Leadership moment matrix with descriptions of leadership (based on McClellan, 2021)

This matrix provides descriptions of the types of leadership that are most likely to emerge based on the motives and processes enacted by a leader. However, it does not say anything about the kind of followership that contributes to the emergence of each kind of leadership. Nonetheless, it is possible to identify the potential approaches to followership that would best facilitate the emergence of each type of leadership. An attempt to do this has been provided in the following matrix of followership (see Figure 2). This matrix uses the same format, but instead of describing the emergent form of leadership, it attempts to describe the form of followership that would best support and cocreate this form of leadership.

	Democratic	Participative	Autocratic
Power Goal	Political Leadership: Followership involves accepting the leader's attempts to shape perception and being willing to choose to empower the leader.	Populist Leadership: Followership involves sharing one's needs and desires with a leader and fully trusting that the leader will serve those interests once given power.	Authoritarian Leadership: Followership involves obeying authority out of fear or tradition.
Achievement Goal-Personal	Manipulative Leadership: Followership involves making choices with others that benefit the leader, trusting that what benefits the leader benefits followers.	Buy-In Leadership: Followership involves sharing one's needs and accepting the leader's decisions and actions based on the assumption that the leader will act on what the follower has shared.	Sales Director Leadership: Followership involves allowing oneself to be persuaded by a leader's narrative, whether one is aware of the self-serving nature of the leader or not.
Achievement Goal-Shared	Adaptive Leadership: Followership involves participating with the leader and other followers in developing shared goals and then working with others to develop and enact a plan to achieve goals.	Transformational Leadership: Followership involves engaging with the leader and other followers to identify individual needs and being willing to pursue shared, morally worthy goals if personal goals are fulfilled as well.	Technical Leadership Followership involves being willing to accept and act on tried-and-true technical solutions offered by a leader.
Affiliation Goal	Accommodating Leadership: Followership involves persuading leaders to provide followers with what they want, even if it occurs at the expense of others and the organization.	Compromising Leadership: Followership involves pursuing self-interest with a willingness to compromise to benefit oneself as much as possible.	Charismatic Leadership: Followership involves being willing to accept the charismatic persona of the leader and their ability to tell stories that resonate.
Service Goal	Facilitated Leadership: Followership involves being willing to engage with others to identify and pursue collective goals that benefit others through collaboration, mutual caring, and supporting others' growth.	Servant Leadership: Followership involves being willing to openly discuss what one needs to grow and achieve success with a leader and other followers and then trusting in the leader to develop a plan and processes that support follower growth, collective goal achievement, a culture of mutual caring, and service to others.	Paternalistic Leadership: Followership involves trusting that a leader is concerned with the well-being of the followers and is acting in their best interest to develop a plan and processes that support follower growth, collective goal achievement, a culture of mutual caring, and service to others.

Figure 2. Leadership moment matrix with descriptions of followership (based on McClellan, 2021)

This approach provides another way of categorizing followership as it relates to leadership as opposed to focusing on followership as a standalone phenomenon. However, the power of this approach is really found in the insights that can be gained regarding how leadership and followership interact to cocreate leadership.

Consequently, it has implications for both instructional practices and leader–follower research.

Instructionally, the use of the momentary leadership concept and these matrices represents a tool for teaching leadership and followership as an emergent, relational phenomenon and helping participants process the implications of this approach on leadership/followership development as opposed to just leader/follower development. To illustrate this, consider the following workshop approach to teaching the concept of leadership as an emergent phenomenon from the perspective of the follower.

Workshop Design

Participants should be seated at round tables of three to four individuals, given a copy of Figure 1, and invited to reflect on a recent meeting they attended. They will then use the leadership matrix in Figure 1 to first identify the type of leadership they witnessed in the meeting. Then, they should be asked to describe the meeting and the type of leadership they experienced with other participants at the table. As they do so, they will select one interesting meeting and leadership approach to examine further. Once selected, these should be shared with the larger group.

Participants will then discuss and identify what the leader did—the specific actions they took or did not take—to create the kind of leadership that emerged in the group. They should make a list of these behaviors and discuss them with the larger group.

Having shared these, participants will reflect on the differences between viewing leadership as something that a leader does rather than something that a leader and follower cocreate. Figure 3 should be presented and explained.

Leadership	Something a leader does	Something leaders and followers cocreate
The focus of study	The leader's traits, behaviors, and style preferences	Leader and follower traits, behaviors, and preferences and how their relationship and interaction shape the leadership that ultimately occurs
The goal	Determined by the leader	Both leader and follower have goals for the interaction
The process	Enacted by the leader	Evolves based on the interplay that occurs between the leader and follower
The direction of influence	From positional leader to positional follower	Bidirectional between the leader and the follower as each respond to how their behaviors and responses shape the interaction between them

Figure 3. Different perspectives on the leader–follower relationship

Once this is done, participants should be given a copy of Figure 2. The facilitator will explain that this chart depicts the kind of followership that most supports and cocreates each kind of leadership. Specific examples will be provided by reading a couple of descriptions from Figure 1 and the corresponding followership descriptions from Figure 2. Participants should identify, using the matrix, the followership approach that most matches their own and that of other followers at the meeting. Once again, this is discussed at each table, and participants will be asked to discuss and identify what they and other followers did, the specific actions they took or did not take, to cocreate the kind of leadership and followership that emerged in the group. They will make a list of these behaviors, identify the followership styles from the matrix displayed by these behaviors, and discuss them with the larger group.

The facilitator will point out that the group now has a description of both the leader's and the followers' behaviors that cocreated the form of leadership that emerged in the meeting. Having done this, the facilitator will ask participants at each table to identify an alternative form of leadership, preferably one that is significantly different from the one that originally emerged. For example, if the original form of leadership was authoritative, they might choose facilitated or one of the other more democratic forms of leadership. With this decision made, the facilitator will ask them how the leader and follower would have to alter their

behaviors to bring about this new form of leadership. Participants will discuss their ideas at their tables, formulate a response, and share it with the rest of the group.

   From here, the facilitator can take the discussion in a variety of directions. They can ask what happens if the leader attempts to change his or her behavior to this approach and followers do not or choose to resist, use a different style, or rebel against this approach. They could also ask what would happen if followers changed their approach to alter the approach of the leader. This could lead to a discussion of a research study in which followers were actually found to be able to change a leader's style by altering their own follower styles (Crowe et al., 1972). While this is one approach to facilitating learning based on momentary leadership and the use of these matrices, other approaches are worth developing.

Implications for Research

This matrix approach to examining leader and follower behavior and how they interact to create emergent forms of leadership could be refined and adapted to explore a variety of questions based on the leader and follower approaches used to design the matrix. Using these matrices, researchers could examine how leader and follower behaviors intersect to create different approaches to leadership. Additional research could be done to see how leaders respond to changes in follower styles and explore alternative responses of followers.

Conclusion

Examining leadership as the product of cocreation has important implications for both the teaching and research associated with leadership. By engaging leaders and followers in dialogue regarding how their individual actions contribute to the nature of leadership that they cocreate together, leadership development professionals and educators can encourage greater understanding of the relational nature of leadership and the importance of both leader and follower behaviors as it relates to leadership style emergence. The workshop format above provides one potential approach for facilitating such a paradigm shift, but it could be adapted in a variety of ways to achieve similar outcomes. Finally, there are some important

implications and avenues for research that this matrix-based approach to momentary leadership provides. It is hoped that this article provides a foundation for the use of this approach in both education and development work and research.

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