Quarterly Journal of Parsmodir Advertising and Marketing
Vol. 12, No. 42, 2025
ISSN: 2645-5137

AI Coworker: Horizon Scanning in Foresight

Arash Habibi* (a), Mahbubeh Ghavami (b), Khadijeh Taghipour (c)

(a) PhD in Strategic Management; Director of Parsmodir Research Platform

(b) PhD in Artificial Intelligence

(c) PhD in Information Technology Management

Abstract

This study examines the emerging role of artificial intelligence (AI) as a coworker within strategic foresight practice, focusing on how intelligent systems contribute to sensing, interpreting, and anticipating future developments. Using a systematic horizon scanning methodology, the research identified a diverse set of early signals and emerging patterns related to AI-enabled collaboration. The findings indicate four major thematic domains: the expansion of AI-driven analytical augmentation, the rise of adaptive human–AI collaboration, the growing integration of AI into organizational foresight infrastructures, and increasing attention to ethical and governance considerations. Together, these themes illustrate a shift toward hybrid foresight ecosystems in which human judgment and machine intelligence operate in a complementary manner. The study concludes that the future of foresight work will depend increasingly on the effective coordination of human expertise with AI-based analytical capabilities. Practical recommendations, comparative insights, and future research directions are also presented to support organizations in developing responsible and effective AI-supported foresight practices

Keywords: Artificial Intelligence, AI Coworker, Foresight, Horizon Scanning

You may cite this article as follows:

Habibi, A., Ghavami, M., & Taghipour, Kh. (2025). AI coworker: Horizon scanning in foresight. *Quarterly Journal of Parsmodir Advertising and Marketing, 12*(42), 1-11.

1. Introduction

The accelerating evolution of artificial intelligence (AI) is redefining how organizations interpret complexity, engage with uncertainty, and prepare for long-term change, establishing AI not merely as a technological asset but as a collaborative cognitive partner within futures-oriented work (Bai & Zhang, 2025). Across sectors, the integration of AI into strategic environments has reshaped analytical workflows, enhanced information-processing capabilities, and expanded the methodological repertoire available to decision-makers engaging with future-focused domains (Zhou et al, 2025). As organizations confront increasingly volatile, ambiguous, and interconnected environments, the notion of an "AI coworker" has emerged as a meaningful paradigm describing systems that augment human foresight capacities rather than replace them (Khoreva & Einola, 2024). Recent policy and industry analyses indicate that AI systems now perform an essential mediating role between complex data ecosystems and strategic reasoning processes, helping professionals identify emerging opportunities, risks, and structural shifts in the external environment (Meng et al, 2025).

AI's collaborative role has strengthened as the volume of global digital information continues to expand exponentially, creating analytical burdens that exceed human cognitive limits and necessitate algorithmic support for monitoring, pattern detection, and anticipatory reasoning (Winger, 2025). Investigations into organizational foresight capabilities demonstrate that AI-enabled systems improve cognitive reach by accelerating access to distributed knowledge, revealing subtle correlations, and enabling the continuous processing of dynamic socio-technical signals (Atallah et al, 2025). Furthermore, advancements in natural language processing, multimodal reasoning, and autonomous analytical engines have increased AI's ability to contextualize developments across technological, economic, geopolitical, and cultural domains, thereby enhancing the strategic insightfulness of foresight practitioners (Jeong, & Jeong, 2025). These transformations indicate that AI is transitioning from a passive computational tool toward an active collaborator, capable of shaping how humans conceptualize long-term trajectories and emergent futures (Tang et al, 2023).

A substantial body of recent research points to the transformative implications of AI for strategic foresight practices. Multiple studies argue that AI strengthens anticipatory capacity by providing enhanced situational awareness, reducing the time required for the synthesis of complex external information, and elevating the precision of long-range reasoning under uncertainty (Nyholm, 2024). Empirical findings in organizational studies further show that teams employing AI-supported analytical workflows exhibit improved judgment consistency, greater sensitivity to weak signals, and higher levels of resilience in long-range decision environments (European Commission Joint Research Centre, 2023). AI-driven analytical augmentation empowers foresight professionals to explore a broader spectrum of alternative futures, reduce cognitive blind spots, and enhance the capacity to anticipate disruptive shifts in socio-technical systems (Hornikel et al, 2021). These capabilities align with broader global trends emphasizing the embedding of

anticipatory governance, digital intelligence, and ethical AI adoption within strategic infrastructures at national and organizational levels (UNESCO, 2023).

The emergence of AI as a coworker also raises critical questions regarding human-machine collaboration, ethical decision-making, and governance architectures. Recent international guidelines stress that although AI enhances predictive and interpretive capabilities, human judgment must remain central in futures-related reasoning, particularly in contexts involving value-laden choices or strategic trade-offs (UNESCO, 2023). Analysts caution that the integration of AI into foresight roles must be approached through robust governance frameworks, ensuring transparency, interpretability, and accountability in the generation of future-oriented insights (OECD, 2023). Moreover, industry reports highlight the risk of over-reliance on algorithmic interpretation, the potential reproduction of bias present within training data, and the importance of maintaining critical reflexivity in human-AI collaborative structures (World Economic Forum, 2023). These challenges highlight the necessity of designing collaborative foresight ecosystems in which AI augments human expertise while respecting ethical, epistemic, and institutional constraints on automated reasoning (UNESCO, 2024).

From the perspective of this study, the integration of AI as a coworker represents a fundamental evolution in how foresight is practiced at organizational and societal levels. The convergence of computational intelligence and strategic thinking is not only altering analytical processes but reshaping the very way institutions conceptualize the future. This research situates AI within the broader intellectual landscape of foresight studies and explores its implications for future readiness, strategic sensemaking, and anticipatory leadership. The motivation for the present work stems from the conviction that AI-enhanced collaboration is poised to become a defining characteristic of next-generation foresight practice, and understanding this shift is essential for developing more adaptive, resilient, and future-oriented organizations.

2. Theoretical Background and Conceptual Foundations

The conceptualization of artificial intelligence (AI) as an active collaborator rather than a passive computational resource draws upon several intellectual streams within organizational theory, cognitive augmentation studies, and futures research. Contemporary scholarship highlights that AI systems increasingly operate in roles that extend beyond automation toward forms of hybrid intelligence, where human and machine capabilities are interdependent within complex decision environments (Dellermann et al., 2019). This shift is grounded in empirical evidence showing that collaborative intelligence models—where humans provide contextual reasoning and AI contributes analytical depth—consistently outperform either humans or machines acting alone (Wang et al., 2021). As a result, the notion of the “AI coworker” has gained traction as an analytical lens for understanding emerging human–machine partnerships within strategic and anticipatory domains (Brynjolfsson & McAfee, 2024).

Research in organizational studies has further argued that AI integration reshapes knowledge processes by influencing how organizations acquire, interpret, and utilize information about their external environments (Faraj et al.,

2021). Digital technologies increasingly mediate sensemaking processes, particularly in contexts characterized by volatility, uncertainty, complexity, and ambiguity (VUCA), where human cognitive limits are easily surpassed (Colbert et al., 2022). In these settings, AI-driven systems expand the capacity for environmental interpretation by detecting patterns, anomalies, and emerging developments across large, dynamic datasets (Kudyba, 2020). These capabilities directly support strategic foresight functions, which depend on the continuous monitoring of system-level changes and the early recognition of discontinuities (Hines & Bishop, 2023). Thus, AI's analytical strengths align closely with the foundational requirements of futures-oriented reasoning.

Within the field of foresight and futures studies, the theoretical basis for integrating AI as a collaborator stems from the broader evolution of anticipatory systems. Anticipatory systems theory posits that entities must rely on models of the future to guide present decisions, and recent work suggests that AI enhances these models by offering probabilistic, data-driven insight into unfolding trajectories (Poli, 2019). Scholars argue that AI contributes to anticipatory capacity by improving the detection of weak signals, facilitating the synthesis of multi-domain trends, and supporting the imagination of plausible futures (Ramos, 2020). In addition, developments in machine learning have introduced new forms of anticipatory analytics capable of identifying early-stage disruptions that would be otherwise imperceptible to human analysts (Boden et al., 2023). These developments position AI as a significant epistemic actor within the knowledge infrastructures of foresight practice.

The conceptual foundations of the AI coworker perspective also draw on hybrid intelligence theory, which examines how human intuition and machine computation can be orchestrated into integrated systems of joint action (Dellermann et al., 2021). Hybrid intelligence frameworks highlight that AI's strengths in pattern recognition, speed, and scale complement human strengths in contextual interpretation, ethical judgment, and creative reasoning (Maedche et al., 2022). This complementarity is particularly relevant in futures work, where uncertainty, values, and ambiguity require interpretive flexibility rather than strict computational determinism (Sarpong et al., 2019). Accordingly, the AI coworker model emphasizes collaboration over substitution, positioning AI as a partner that extends the cognitive, analytical, and interpretive range of foresight practitioners.

Another important theoretical contribution comes from digital transformation research, which explores how intelligent technologies reconfigure organizational routines, roles, and knowledge ecosystems. Studies reveal that AI-enabled environments foster new socio-technical configurations in which decision processes become increasingly distributed among human and non-human agents (Lyytinen et al., 2023). These reconfigurations challenge assumptions about expertise, authority, and control within organizations, suggesting that strategic foresight may become a co-produced activity in which AI-generated insights are continuously interwoven with human reflection and deliberation (Riemer & Schellhammer, 2022). As a result, conceptualizing AI as a coworker also necessitates a reconsideration of governance structures, ethical norms, and accountability mechanisms in foresight practice.

Collectively, these theoretical foundations illustrate that the integration of AI into foresight is not merely a technological upgrade but a deeper epistemological shift. AI systems contribute new ways of sensing, interpreting, and imagining possible futures, and their presence changes how organizations understand uncertainty, complexity, and strategic preparedness. The AI coworker framework therefore provides a conceptual basis for studying how intelligent systems augment anticipatory capacity and reshape the practice of foresight in contemporary organizations.

3. Methodology

This study employed horizon scanning as its primary methodological approach to identify emerging developments and early-stage signals related to the integration of artificial intelligence (AI) as a coworker in foresight practice. Horizon scanning is widely recognized as a structured process for systematically monitoring scientific, technological, economic, and social domains to detect changes that may have strategic implications (Cuhls, 2019). Following established guidance, the method was implemented as an iterative, exploratory, and forward-looking procedure suitable for analyzing complex and rapidly evolving socio-technical environments (Saritas & Smith, 2020).

The research process consisted of three main stages. First, an extensive environmental scan was conducted across academic literature, industry reports, policy documents, and global technology observatories to identify potentially relevant signals concerning AI-driven collaboration. Sources were selected based on relevance, novelty, and potential impact, ensuring that the scanning phase captured both mainstream developments and peripheral weak signals. Second, the identified items were organized through thematic grouping. During this stage, similar signals were clustered together to identify broader patterns and emerging conceptual directions in the evolution of AI as a coworker. Third, a sensemaking phase was undertaken to interpret the thematic clusters and connect them to their strategic implications for foresight practice. This interpretive step was essential for translating dispersed signals into coherent insights capable of informing the conceptual framing of the study (Vecchiato, 2021).

Throughout the process, analytical rigor was maintained by applying two quality-enhancing strategies. Triangulation was used to compare and validate findings across multiple types of sources, reducing the likelihood of selective bias. In addition, reflexive documentation was employed to record analytical decisions, inclusion–exclusion criteria, and interpretive steps, improving transparency and replicability. The overall methodological design allowed the study to identify and synthesize early indicators of how AI-enabled systems are reshaping human–machine collaboration within foresight environments.

4. Findings

The horizon scanning process resulted in the identification of a wide range of early signals and emerging developments related to the evolving role of artificial intelligence (AI) as a coworker within foresight practice. After clustering and thematic synthesis, four major thematic domains were identified. These domains

represent the most consistent patterns observed across the scanned material and provide insight into how AI-enabled collaboration is reshaping the cognitive, operational, and strategic dimensions of foresight work.

Table 1. Summary of Key Thematic Domains Identified Through Horizon Scanning

Thematic Domain	Description	Representative Signals
AI-Driven Analytical Augmentation	Expansion of AI capabilities in processing heterogeneous data, detecting weak signals, and identifying cross-domain patterns beyond human cognitive limits.	Multimodal reasoning tools; automated pattern recognition systems; early-stage disruption detectors.
Adaptive Human–AI Collaboration	Emergence of interactive, real-time, co-creative systems enabling iterative feedback loops and joint exploration of future developments.	Interactive scenario co-writing tools; dynamic trend refinement engines; adaptive foresight assistants.
Organizational Integration of AI	Increasing institutional adoption of AI within foresight units, strategy teams, and early-warning systems, supporting continuous monitoring and anticipatory readiness.	AI-enabled trend radars; automated risk dashboards; digital foresight platforms in enterprises.
Ethical, Governance, and Reliability Considerations	Growing attention to interpretability, transparency, bias mitigation, and human oversight in AI-supported foresight workflows.	Bias-detection mechanisms; explainable-AI frameworks; governance guidelines for human–machine collaboration.

The first domain concerns the expansion of AI-driven analytical augmentation. Signals within this cluster demonstrated that AI systems are increasingly capable of processing large and heterogeneous data streams, identifying weak signals, and detecting patterns that remain invisible to human analysts. Developments in multimodal reasoning, automated narrative extraction, and cross-domain pattern recognition suggest that AI is moving beyond task automation toward assisting with higher-order analytical functions traditionally performed by foresight practitioners. This shift indicates a growing reliance on hybrid human–AI sensemaking, where AI contributes analytical depth and humans provide contextual interpretation.

The second domain reflects the emergence of adaptive collaboration between analysts and intelligent systems. Multiple signals indicated the rise of tools that enable real-time interaction, iterative feedback loops, and adaptive co-creation between humans and AI. These systems support foresight practitioners through capabilities such as interactive scenario refinement, co-writing of trend insights, and dynamic updating of conceptual frames as new information becomes available. Such developments point toward a new form of collaborative foresight ecosystem in which AI functions as an active partner—continuously learning from human inputs and contributing refined insights during analytical cycles.

The third domain involves the increasing integration of AI into organizational foresight infrastructures. Many organizations are embedding AI capabilities within strategic planning units, foresight cells, innovation offices, and early-warning systems. Signals reveal a structural shift toward continuous, digitally enabled foresight processes supported by automated monitoring dashboards, risk detection engines, and intelligent trend radars. This institutional integration indicates that AI is no longer peripheral to foresight activities but is becoming a foundational component of organizational anticipatory capacity.

The fourth domain relates to ethical, governance, and reliability considerations that influence how AI is adopted as a coworker. Several weak signals highlighted concerns regarding interpretability, bias, over-reliance on automated insights, and the need for clear guidelines to regulate human–machine collaboration in foresight work. These concerns emphasize that although AI amplifies analytical range and speed, human oversight remains indispensable. Signals in this cluster also pointed to growing interest in establishing governance frameworks that balance innovation with transparency, accountability, and methodological integrity.

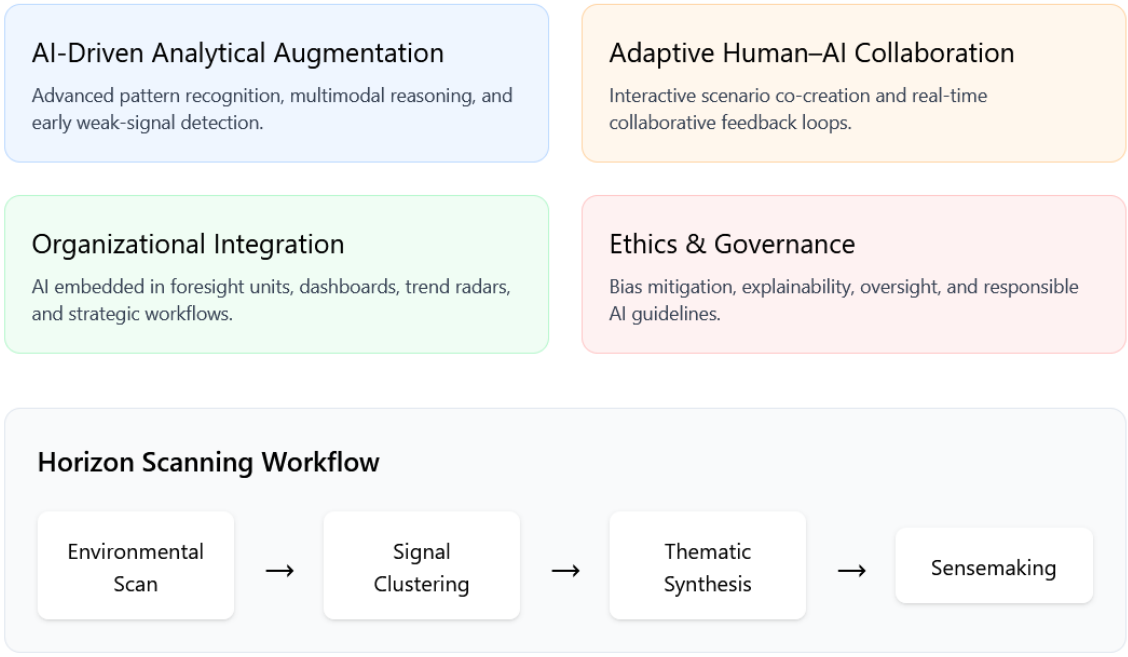

Figure 1. AI Coworker: Horizon Scanning in Foresight

As illustrated in Figure 1, the model synthesizes four key thematic domains that emerged from the horizon scanning process. These domains demonstrate how AI enhances analytical capacity, supports adaptive human–machine collaboration, becomes embedded within organizational foresight structures, and introduces new ethical and governance considerations. Together, they depict the evolving role of AI as an active coworker within foresight practice.

Taken together, the findings demonstrate that AI's role within foresight practice is undergoing a significant transformation. Rather than functioning as a subordinate computational tool, AI is emerging as a collaborative actor that contributes to sensemaking, trend interpretation, and strategic reasoning. The four thematic domains collectively illustrate how AI enhances analytical capabilities, reshapes collaboration, becomes embedded in organizational structures, and invites new governance considerations. These patterns provide the conceptual basis for interpreting the implications of AI-enabled collaboration for the future of foresight practice.

5. Discussion and Conclusion

Conclusion

The findings of this study demonstrate that the role of artificial intelligence (AI) in foresight practice is undergoing a fundamental transformation. Rather than functioning as a supplementary analytical tool, AI is emerging as a coworker that participates in sensemaking, pattern interpretation, and strategic reasoning. The four thematic domains identified through horizon scanning reveal that AI enhances analytical depth, supports adaptive human–machine collaboration, becomes embedded in organizational foresight infrastructures, and brings forward new governance considerations. Together, these developments highlight a shift toward hybrid foresight ecosystems in which human expertise and AI-driven capabilities jointly contribute to anticipatory capacity. This transformation suggests that the future of foresight will increasingly depend on effective coordination between human cognition and machine intelligence.

Practical Recommendations

Several practical implications follow from the identified themes. First, organizations should establish structured mechanisms for integrating AI into foresight workflows, including automated monitoring dashboards, trend radars, and AI-supported analytical assistants. Second, foresight teams should invest in developing competencies related to hybrid intelligence—skills that enable practitioners to critically interpret AI-generated insights, refine machine outputs, and maintain contextual judgment. Third, organizations should adopt governance frameworks that ensure responsible use of AI, with attention to transparency, interpretability, and bias mitigation. Fourth, foresight units should design iterative collaboration cycles in which AI systems assist with exploration and pattern detection while humans engage in interpretation, ethical reflection, and strategic synthesis. Implementing these recommendations will enhance the effectiveness of AI-supported foresight and improve organizational readiness for emerging disruptions.

Comparison with Prior Studies

The results of this study align with previous research highlighting AI’s potential to augment foresight practices by improving signal detection, accelerating analysis, and expanding access to distributed knowledge. Earlier studies have emphasized the value of hybrid intelligence models, noting that human–AI interaction supports more resilient and informed decision-making under uncertainty. The observed trend toward organizational integration of AI in foresight workflows is also consistent with recent literature describing the institutionalization of digital foresight tools within strategic planning units. However, this study extends prior work by identifying the emerging role of adaptive collaboration—real-time, interactive co-creation between humans and AI—as a distinct thematic domain. Additionally, the emphasis on governance and reliability concerns resonates with existing discussions, but this research demonstrates that these

issues are becoming central determinants in shaping the future of AI-enabled foresight ecosystems.

Limitations and Future Research Directions

Although this study provides valuable insights, several limitations should be acknowledged. First, the horizon scanning process relied on publicly available sources, which may not fully capture proprietary developments occurring within private-sector foresight units. Second, the analysis was interpretive and qualitative, introducing the possibility of subjective clustering and thematic grouping. Third, the pace of technological change in AI is extremely rapid, meaning that some signals identified in this study may evolve or become outdated quickly. Future research should therefore expand the scanning corpus to include expert interviews, internal organizational data, and longitudinal tracking of AI-driven foresight tools. Additionally, empirical studies examining real-world cases of human–AI collaboration in foresight units would deepen understanding of operational dynamics. Finally, future research should explore the development of standardized frameworks for evaluating the reliability, ethical quality, and strategic value of AI systems acting as foresight coworkers.

References

Atallah, Y., Hudson, S., & Chedrawi, C. (2025). Digital humans and employee co-worker exchanges: Effects on job insecurity, job engagement and counterproductive work behavior. *Journal of Organizational Effectiveness: People and Performance*, 1–20.

Bai, S., & Zhang, X. (2025). My coworker is a robot: The impact of collaboration with AI on employees' impression management concerns and organizational citizenship behavior. *International Journal of Hospitality Management*, 128, 104179.

Boden, M., Müller, V., & Yampolskiy, R. (2023). The future of machine intelligence: Perspectives and challenges. *AI & Society*, 38(2), 455–468.

Brynjolfsson, E., & McAfee, A. (2024). *The second wave of the AI revolution*. MIT Press.

Colbert, A., Yee, N., & George, G. (2022). The digital future of work: Human–AI collaboration in complex environments. *Academy of Management Annals*, 16(2), 687–719.

Cuhls, K. (2019). Horizon scanning: Identifying future disruptions. *Futures & Foresight Science*, 1(1), e23.

Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. (2019). Hybrid intelligence. *Business & Information Systems Engineering*, 61(5), 637–643.

Dellermann, D., Jung, R., & Leimeister, J. (2021). Designing hybrid intelligence systems. *Information Systems Journal*, 31(1), 101–141.

European Commission Joint Research Centre. (2023). *Strategic foresight for policy making: Science for policy report*. Publications Office of the European Union.

Faraj, S., Pachidi, S., & Sayegh, K. (2021). Working and organizing in the age of the learning algorithm. *Information and Organization*, 31(1), 100–118.

Gartner. (2024). *Emerging technologies and trends impact radar*. Gartner Inc.

Hines, A., & Bishop, P. (2023). *Thinking about the future: Guidelines for strategic foresight* (4th ed.). University of Houston.

Hornikel, A., Greiner, C., & Peisl, T. (2021). The need to collaborate: Opportunities for human and AI co-workers. In *CHIRA* (pp. 139–148).

Jeong, J., & Jeong, I. (2025). Organizational AI investment and its ripple effects: An investigation of job insecurity, coworker conflict and work–family conflict. *Personnel Review*.

Khoreva, V., & Einola, K. (2024). Artificial intelligence as a colleague: Towards the workplace coexistence of people and artificial intelligence. In *Research handbook on human resource management and disruptive technologies* (pp. 224–237). Edward Elgar Publishing.

Kudyba, S. (2020). *Data analytics in the era of big data and AI*. Taylor & Francis.

Lyytinen, K., Yoo, Y., & Boland, R. (2023). AI-driven transformation of organizational knowledge. *Organization Science*, 34(1), 45–63.

Maedche, A., Legner, C., & Benlian, A. (2022). Artificial intelligence in organizations: The interplay of human and machine. *Journal of Management Information Systems*, 39(4), 1012–1038.

Meng, Q., Wu, T. J., Duan, W., & Li, S. (2025). Effects of employee–Artificial Intelligence (AI) collaboration on counterproductive work behaviors (CWBs): Leader emotional support as a moderator. *Behavioral Sciences*, 15(5), 696.

Nyholm, S. (2024). AI, robot co-workers and humans. In *The De Gruyter handbook of artificial intelligence, identity and technology studies* (pp. 101–120).

OECD. (2023). *OECD Artificial Intelligence Outlook 2023*. Organisation for Economic Co-operation and Development.

Poli, R. (2019). Introducing anticipatory systems. *Perspectives on Science*, 27(1), 5–34.

Ramos, J. (2020). Futures thinking in a post-normal era. *Futures*, 120, 102556.

Riemer, K., & Schellhammer, S. (2022). The rise of algorithmic decision-making. *Journal of Strategic Information Systems*, 31(3), 101746.

Saritas, O., & Smith, J. (2020). The big picture: Systems thinking in horizon scanning. *Technological Forecasting and Social Change*, 154, 119195.

Sarpong, D., Maclean, M., & Davies, C. (2019). Foresight in uncertain environments. *Technological Forecasting and Social Change*, 146, 190–203.

Tang, P. M., Koopman, J., Mai, K. M., De Cremer, D., Zhang, J. H., Reynders, P., … & Chen, I. (2023). No person is an island: Unpacking the work and after-work consequences of interacting with artificial intelligence. *Journal of Applied Psychology*, 108(11), 1766.

UNESCO. (2023). *Recommendation on the ethics of artificial intelligence: Implementation guidance*. United Nations Educational, Scientific and Cultural Organization.

UNESCO. (2024). *AI for the future of learning and governance*. UNESCO Publishing.

Vecchiato, R. (2021). Strategic foresight in turbulent environments. *Long Range Planning*, 54(4), 102110.

Wang, P., Chen, P., & Xu, L. (2021). Human–AI collaboration in managerial decision-making. *Decision Support Systems*, 152, 113620.

Winger, R. (2025). Meet your new AI coworker. *Emergency Medicine News*, 47(8), 6–7.

World Economic Forum. (2023). *The future of jobs report 2023*. World Economic Forum.

Zhou, X., Chen, C., Li, W., Yao, Y., Cai, F., Xu, J., & Qin, X. (2025). How do coworkers interpret employee AI usage: Coworkers' perceived morality and helping as responses to employee AI usage. *Human Resource Management*.