



The MIRA™–ASAF™ Program for Workforce Transformation and Agentic Governance

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Abstract

Purpose: This conceptual article develops an integrated framework for managing workforce transformation and governance in organizations adopting agentic artificial intelligence.

Methodology: It synthesizes research on dynamic capabilities, human-AI collaboration, workforce skills, organizational design, and AI governance to derive two complementary frameworks.

Findings: The Machine-Integrated Relational Adaptation (MIRA) framework explains how organizations can orchestrate human, collective, artificial, agentic, platform, and ecosystem intelligence to build adaptive capabilities. The Agentic Sludge Audit Framework (ASAF) identifies cognitive, operational, digital, organizational, agentic, and risk-and-compliance friction created by autonomous agents and translates these risks into recurring audit domains and performance indicators.

Practical implications: Together, the frameworks provide managers with a closed-loop approach to redesigning work, developing workforce capabilities, defining human oversight, and evaluating whether automation creates net organizational value.

Originality/value: The article connects workforce capability development with continuous agent-governance auditing in an integrated socio-technical architecture and advances explicit testable propositions and an implementation roadmap for organizational application and future empirical validation.

Keywords: Agentic AI; Future of Work; Dynamic Capabilities; Human-AI Collaboration; Workforce Transformation

Graphical Model of the Proposed Framework

The figure below depicts the integrated MIRA™–ASAF™ system: six intelligence sources feed the MIRA orchestration engine, which drives dynamic capability development and work-

force/skills redesign; redesigned, agent-mediated workflows are then continuously monitored by the ASAF governance loop, whose friction diagnostics feed back into MIRA to refine capability-building — producing a closed-loop system oriented toward net organizational value.

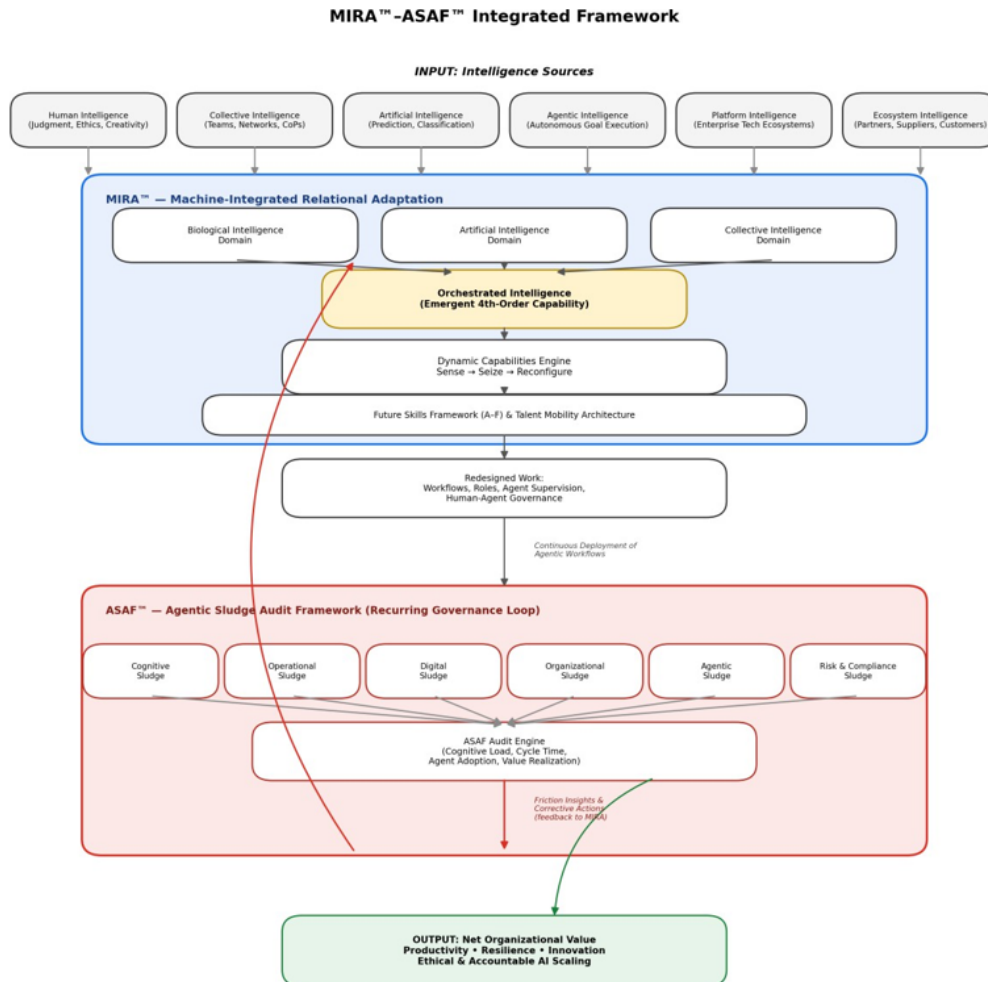


Figure 1: Integrated MIRA™–ASAF™ system architecture.

Strategic Context: From Digital Transformation to Intelligence Transformation

Enterprise transformation has progressed through three distinguishable waves:

Table 1: Three Waves of Enterprise Transformation

Wave	Focus	Primary Value Driver
First Wave	Digitization of processes and records	Efficiency of information capture
Second Wave	Automation, analytics, and data-driven decisioning	Efficiency of execution
Third Wave	Intelligence Transformation	Integration of human, artificial, and collective intelligence into orchestrated decision systems

The third wave is defined by value creation emerging from the integration of six intelligence types:

- Human Intelligence: judgment, ethics, creativity
- Collective Intelligence: knowledge distributed across

teams and networks

- Artificial Intelligence: prediction, classification, and optimization at machine scale
- Agentic Intelligence: autonomous, goal-directed task execution
- Platform Intelligence: capability embedded in enterprise technology ecosystems
- Ecosystem Intelligence: intelligence generated across partner, supplier, and customer networks

This evolution requires organizations to move beyond technology adoption toward intelligence orchestration — the deliberate coordination of human and machine cognition to generate decisions, knowledge, innovation, and business value. OECD research indicates that AI is reshaping work tasks, skill requirements, and workforce structures across industries and increasing the importance of cognitive, digital, managerial, and social competencies [4], [5]. Field evidence also shows that generative AI can improve worker productivity while producing heterogeneous effects across experience and skill levels [6]. These findings frame intelligence orchestration as an organizational-design and capability-development challenge, not solely a technology-adoption problem.

Program Vision and Mission

Vision: Build future-ready organizations in which humans and intelligent systems continuously learn, adapt, and innovate together.

Mission: Develop an adaptive workforce capable of leveraging Generative AI, Agentic AI, collective intelligence, and platform technologies to improve productivity, resilience, innovation, and organizational performance — while maintaining human agency, accountability, and ethical oversight over autonomous systems.

Conceptual Methodology

Research design. This article employs an integrative conceptual-review design to develop a theory-informed framework rather than to estimate causal effects or report primary empirical findings. The approach is appropriate for connecting constructs that are dispersed across dynamic capabilities, hu-

man-AI collaboration, workforce transformation, organizational design, skills development, and AI governance. The unit of analysis is the organizational capability system through which human and machine intelligence are combined, governed, and translated into workforce and performance outcomes.

Evidence scope and selection. The evidence base combines peer-reviewed scholarship, institutional reports, and authoritative conceptual sources that directly inform one or more of four analytical domains: organizational capabilities, work redesign, workforce skills, and agentic-AI governance. Sources were retained when they clarified a focal construct, supplied empirical or theoretical support for a proposed relationship, or enabled operationalization through observable indicators. Sources that were duplicative, peripheral to organizational-level analysis, or insufficiently documented were excluded. Because the review is integrative and purposefully bounded rather than systematic, it does not claim exhaustive coverage of the rapidly evolving agentic-AI literature.

Analytical procedure. The synthesis followed four stages. First, recurring constructs and mechanisms were extracted from the selected evidence. Second, overlapping concepts were consolidated into the intelligence, capability, workforce, and governance domains used in the Machine-Integrated Relational Adaptation (MIRA) framework. Third, anticipated sources of cognitive, operational, digital, organizational, agentic, and risk-and-compliance friction were translated into the Agentic Sludge Audit Framework (ASAF), its audit domains, and its performance measures. Fourth, relationships among orchestration capability, workforce adaptability, human oversight, agent autonomy, audit maturity, and organizational performance were expressed as six propositions that can be evaluated empirically.

Rigor and boundary conditions. Conceptual consistency was assessed by checking that each framework component had a defined organizational function, a plausible mechanism, and a measurable implication. Claims supported by established field or experimental evidence are distinguished from forward-looking propositions concerning multi-agent coordination, organizational structure, and emerging work. The resulting MIRA-ASAF model should therefore be interpreted as an analytically derived design framework that requires longitudinal, cross-industry, and multi-level validation. Its transferability may vary with regulatory context, task interdependence,

data quality, workforce readiness, and the autonomy and transparency of the deployed AI systems.

Implications of Agentic AI on the Nature and Types of Work

Agentic AI — autonomous, goal-directed systems capable of planning, tool use, and multi-step execution with limited human supervision [2] — is altering the fundamental unit of work redesign. Four structural shifts are especially consequential for organizational design and workforce strategy.

From task automation to workflow reconfiguration

Earlier generations of AI and RPA automated discrete, well-bounded tasks within a fixed workflow. Agentic systems instead decompose higher-level goals, sequence sub-tasks, invoke tools and other agents, and adapt plans dynamically in response to intermediate outcomes [2], [3]. This shifts the locus of redesign from the task to the workflow. It may also increase demand for responsibilities involving agent supervision, exception handling, workflow assurance, and multi-agent coordination; whether these responsibilities consolidate into distinct occupational categories remains an empirical question [3].

Coordination-cost compression and organizational flattening

Agentic systems may absorb portions of communication, monitoring, task-allocation, and exception-routing work that previously required human coordination. They could therefore alter managerial coordination burdens and feasible spans of control, but this relationship requires direct organizational-level testing. Evidence of hierarchy-wide flattening remains emergent. Field evidence for generative AI demonstrates heterogeneous productivity gains across workers and tasks, suggesting that organizational redesign should be treated as a testable contingency rather than a universal outcome [6].

Endogenous creation of new work, not only displacement of old work

Because agentic systems may lower the cost of coordinating complex activities, they could make responsibilities such as continuous agent supervision, workflow assurance, performance auditing, and cross-agent conflict resolution more feasible. These possibilities are theoretically grounded organiza-

tional propositions rather than settled labor-market outcomes. Evidence that AI assistance can diffuse high-performer practices and generate larger gains for less-experienced workers supports examining augmentation, learning, and work redesign jointly [6].

Governance, explainability, and accountability as a distinct occupational function

Because agentic architectures vary widely in transparency — from symbolic, rule-based agents to opaque neural or hybrid architectures — they carry materially different explainability and governance profiles [2]. This variation may increase demand for responsibilities focused on agent governance, auditability, escalation, and accountability. Whether these responsibilities become distinct occupational functions remains an empirical question. These governance needs provide the organizational rationale for the ASAF™ framework introduced in Section 11.

Taken together, these four shifts suggest that workforce planning should move beyond a narrow “which tasks get automated” framing toward examining how workflows, spans of control, competencies, and accountability structures may be redrawn. This proposition underlies MIRA™ and ASAF™ and requires organizational-level validation.

MIRA™: Machine-Integrated Relational Adaptation Framework

Definition

Machine-Integrated Relational Adaptation (MIRA™) is a socio-technical workforce transformation framework describing how humans, AI systems, autonomous agents, and organizational structures continuously co-evolve, learn, and adapt within dynamic business environments. MIRA positions AI not as a substitute for human capability but as an augmentation mechanism that extends organizational adaptability, decision quality, and collective intelligence.

MIRA Core Intelligence Domains

Biological Intelligence — capabilities unique to humans: strategic judgment, ethical reasoning, creativity, emotional intelligence, contextual sense-making, and leadership.

Artificial Intelligence — machine-enabled capabilities: prediction, classification, optimization, automation, and autono-

mous task execution.

Collective Intelligence — distributed intelligence emerging through teams, knowledge networks, communities of practice, and organizational ecosystems.

Orchestrated Intelligence — the coordinated integration of human, machine, and collective intelligence, structured through governance, workflow design, and shared accountability, to maximize organizational learning, adaptability, and performance. Orchestrated Intelligence is the emergent,

fourth-order capability that MIRA is designed to cultivate — it does not exist independently of the other three domains but arises from their deliberate integration.

AI as a Higher-Order Dynamic Capability

MIRA extends Dynamic Capabilities Theory [7], [8] by positioning AI — particularly Generative and Agentic AI — as a higher-order capability that strengthens an organization's capacity to sense, seize, and reconfigure resources under conditions of uncertainty.

Table 2: AI-Enabled Dynamic Capabilities and Illustrative Outcomes

Dynamic Capability	AI-Enabled Mechanism	Illustrative Outcomes
Sense	Continuous monitoring and pattern detection across markets, customers, technologies, and competitors	Early identification of market shifts, emerging opportunities, and competitive threats
Seize	AI-augmented decision support, scenario simulation, and generative ideation	Faster decision-making, accelerated innovation, more responsive strategic investment
Reconfigure	Agentic workflow redesign and skills-based workforce redeployment	Organizational redesign, process transformation, capability renewal

This framing treats AI not as a static tool applied to existing processes, but as a proposed capability that may strengthen the organization's sensing, decision, and adaptation infrastructure — consistent with Teece's emphasis on capability renewal as a source of sustained competitive advantage under conditions of uncertainty [7]. The possibility that agentic AI affects coordination structures, rather than only task execution, is advanced here as a testable organizational proposition rather than an established empirical result.

Future Skills Framework

MIRA organizes future workforce skills into six interdependent categories. Categories A–D reflect established taxonomies [1], [4]; categories E and F extend the taxonomy to address emerging agentic and adaptive capability requirements not yet fully codified in mainstream skills frameworks, consistent with the new agent-supervision and orchestration roles discussed in Section 3 [2], [3].

Table 3: Future Workforce Skills Framework

Category	Representative Skills
A. Cognitive Skills	Critical thinking, systems thinking, strategic thinking, design thinking, complex problem solving, analytical reasoning, decision intelligence
B. Human-Centered Skills	Leadership, communication, collaboration, negotiation, emotional intelligence, stakeholder management, change leadership
C. Digital Skills	Digital fluency, data literacy, cloud technologies, automation technologies, platform ecosystems, cybersecurity awareness
D. Artificial Intelligence Skills	AI literacy, prompt engineering, generative AI utilization, AI risk management, AI governance, human-AI collaboration
E. Agentic AI Skills	Agent design, agent management, agent supervision, multi-agent orchestration, autonomous workflow design, human-agent decision governance
F. Adaptive Skills	Learning agility, resilience, adaptability, continuous learning, knowledge management, innovation capability

The World Economic Forum identifies analytical thinking, resilience, flexibility, leadership, creative thinking, and AI-related competencies as among the most significant future work-

force skills [1].

Enterprise Skills Mapping Framework

Table 4: MIRA Capability Domains and Component Capabilities

Capability Domain	Component Capabilities
Strategic	Strategic planning, business acumen, market intelligence, innovation management
Technology	Artificial intelligence, data analytics, intelligent automation, platform technologies
Organizational	Change management, organizational learning, knowledge management, talent development
Human	Leadership, collaboration, communication, emotional intelligence
Adaptive	Learning agility, innovation capability, continuous improvement, workforce flexibility

Future Skills Competency Matrix

Competency Maturity Levels

Table 5: Workforce Proficiency Levels

Level	Designation	Description
L1	Awareness	Understands concepts and terminology
L2	Working Knowledge	Applies concepts with guidance
L3	Practitioner	Works independently
L4	Advanced Practitioner	Leads implementation and mentors others
L5	Strategic Leader	Shapes enterprise strategy and transformation

Workforce Competency Matrix

Table 6: Enterprise AI Competency Matrix

Competency	L1	L2	L3	L4	L5
AI Literacy	Awareness	User	Practitioner	Governance Leader	Enterprise Strategist
Data Literacy	Understands Data	Analyzes Data	Data Practitioner	Data Leader	Data Strategist
Human-AI Collaboration	User	Collaborator	Workflow Designer	Enterprise Integrator	Transformation Leader
Agentic AI Management	Awareness	Supervisor	Coordinator	Architect	Enterprise Orchestrator
Critical Thinking	Basic Analysis	Structured Decisions	Strategic Analysis	Enterprise Problem Solving	Executive Sensemaking
Innovation Capability	Contributor	Experimenter	Innovation Lead	Portfolio Leader	Chief Innovation Architect
Learning Agility	Learner	Self-Directed Learner	Knowledge Contributor	Capability Champion	Learning Organization Leader
Change Leadership	Participant	Change Advocate	Project Leader	Program Leader	Enterprise Transformation Executive

Talent Mobility and Workforce Architecture

Traditional model: Jobs → Roles → Functions Future model:

Skills → Capabilities → Opportunities → Value Creation

Organizations should establish:

- **Skills-Based Talent Architecture** — align workforce planning around capabilities rather than static job descriptions.
- **AI-Powered Talent Marketplaces** — enable intelligent matching between skills, learning opportunities, projects, internal mobility pathways, and career transitions.
- **Dynamic Career Pathways** — support reskilling, upskilling, cross-skilling, and career reinvention.

Because AI assistance can alter task allocation, learning, and performance differently across workers, organizations should periodically reassess role boundaries and mobility pathways as deployment evidence accumulates [6].

Learning-to-Learn Organization Model

Future-ready organizations develop meta-learning capabilities characterized by:

- **Continuous Learning** — embedded within workflows, not confined to formal training events.
- **Intelligent Learning Systems** — AI-powered capability assessments and personalized development pathways.

- **Communities of Practice** — cross-functional knowledge-sharing networks.
- **Continuous Experimentation** — rapid testing, learning, adaptation, and scaling.

The OECD identifies continuous learning and workforce adaptation as critical requirements for maximizing AI-related productivity gains and workforce resilience [4], [5].

ASAF™: Agentic Sludge Audit Framework

Purpose

The Agentic Sludge Audit Framework (ASAF™) evaluates possible friction, complexity, decision burdens, and process bottlenecks associated with AI agents, autonomous systems, and intelligent workflows. Poorly governed implementations may introduce workflow complexity, cognitive burden, exceptions, and accountability gaps [2]. ASAF treats these possible effects as auditable risks rather than established universal outcomes.

Definition of Agentic Sludge

Agentic Sludge refers to the cumulative friction, complexity, cognitive burden, workflow inefficiency, process redundancy, governance overhead, and decision latency created by autonomous agents and AI-driven systems.

ASAF Assessment Domains

Table 7: ASAF Audit Domains

Domain	What It Measures
Cognitive Sludge	Information overload, alert fatigue, decision fatigue, prompt complexity
Operational Sludge	Task duplication, workflow inefficiencies, exception management burden, escalation complexity
Digital Sludge	User interface complexity, system fragmentation, integration gaps, excessive human intervention requirements
Organizational Sludge	Approval bottlenecks, governance complexity, role ambiguity, accountability conflicts
Agentic Sludge (agent-specific)	Agent coordination failures, multi-agent conflicts, excessive autonomous actions, explainability deficiencies
Risk and Compliance Sludge	Audit burden, compliance overhead, documentation complexity, human review requirements

ASAF Performance Metrics

Table 8: ASAF Performance Metrics

Category	Metrics
Workforce	Employee cognitive load index, human-AI collaboration score, agent adoption rate, user satisfaction index
Operational	Process cycle time, decision velocity, automation effectiveness, workflow efficiency
Strategic	Innovation velocity, organizational agility, capability maturity, AI value realization

Note: ASAF is proposed as a recurring audit — conducted at agent deployment, at defined intervals thereafter, and after major workflow changes — because agent behavior, workflow dependencies, user practices, and organizational effects may evolve during deployment. The appropriate audit frequency and its effect on performance require empirical validation.

Testable Propositions

The integrated MIRA-ASAF model generates the following propositions for empirical evaluation:

P1. Intelligence orchestration capability will be positively associated with organizational sensing, seizing, and reconfiguration performance.

P2. Workforce adaptability will mediate the relationship between agentic AI adoption and net organizational value realization.

P3. Explicit human oversight, escalation rights, and decision boundaries will strengthen the positive relationship between agentic AI adoption and workflow performance.

P4. Agent autonomy will be positively associated with cognitive, operational, digital, organizational, agentic, and risk-and-compliance sludge when recurring ASAF audits are absent or weak.

P5. The frequency and maturity of ASAF audits will be negatively associated with decision latency, workflow rework, exception-management burden, and compliance overhead.

P6. The positive effect of the integrated MIRA-ASAF system on organizational performance will be stronger when workforce capability development and agent-governance mechanisms are implemented jointly rather than independently.

Implementation Roadmap

Table 9: MIRA-ASAF Implementation Roadmap

Phase	Focus	Key Activities	Indicative Timeline
1. Diagnose	Baseline capability and friction assessment	Skills gap analysis, ASAF baseline audit, stakeholder alignment	Months 1–2
2. Design	Framework customization	Tailor MIRA skills taxonomy and competency matrix to organizational context; define KPIs	Months 2–3
3. Pilot	Controlled deployment	Launch MIRA capability-building in 1–2 business units; deploy ASAF audit on active agentic workflows	Months 3–6
4. Scale	Enterprise rollout	Expand skills-based talent architecture, AI-powered talent marketplace, and governance mechanisms enterprise-wide	Months 6–12
5. Institutionalize	Continuous improvement	Embed recurring ASAF audits, mature learning-to-learn systems, integrate KPIs into strategic planning cycles	Months 12+ (ongoing)

Risks, Limitations, and Governance Considerations

Adoption risk: Skills-based and agentic-governance models require cultural change management; underinvestment in change leadership can stall transformation regardless of framework quality.

Measurement risk: Several proposed KPIs (e.g., “Organizational Resilience Score,” “Dynamic Capability Maturity”) require organization-specific operationalization before they can be reliably tracked.

Governance overlap: ASAF should be coordinated with existing AI risk, compliance, and data governance functions to avoid duplicative oversight structures.

Equity risk: AI-powered talent marketplaces and competency matrices must be periodically audited for algorithmic bias in

skills-matching and mobility recommendations.

Accountability risk: As agentic architectures vary in transparency, organizations should map explainability requirements to agent autonomy level before deployment, rather than applying uniform governance across heterogeneous agent types [2].

Framework maturity: MIRA™ and ASAF™ are newly proposed frameworks informed by established research on workforce skills, AI-related labor-market change, workplace productivity, and dynamic capabilities [1], [4]–[8]. Their integrated structure and proposed performance effects have not yet been independently validated. Organizations should treat the initial KPIs as directional targets to be refined through pilot data.

Program Success Indicators

Table 10: Program Success Indicators

Category	Indicator	Target
Workforce	AI Literacy	> 90%
Workforce	Future Skills Certification	> 80%
Workforce	Internal Mobility Increase	> 25%
Workforce	Learning Participation	> 85%
Organizational	Productivity Improvement	> 15%
Organizational	Automation Value Capture	> 20%
Organizational	Skills Gap Reduction	> 30%
Organizational	Employee Adaptability Index Improvement	> 25%
Strategic	Innovation Pipeline Growth	Directional / trend-based
Strategic	Revenue from AI-Enabled Services	Directional / trend-based
Strategic	Dynamic Capability Maturity	Directional / trend-based
Strategic	Organizational Resilience Score	Directional / trend-based

Research Foundation

The MIRA–ASAF framework integrates theories and research from: Dynamic Capabilities Theory, Human-AI Collaboration, Workforce Transformation, Organizational Learning, Collective Intelligence, Skills-Based Talent Management, Platform Ecosystems, and Agentic AI Governance.

The framework conceptualizes Generative AI and Agentic AI

as higher-order dynamic capabilities that strengthen organizational sensing, seizing, and reconfiguration capacities, while ASAF provides a governance mechanism to identify and reduce agentic friction, ensuring sustainable value realization.

Conclusion

This conceptual article advances an integrated approach to the agentic-AI-mediated future of work by linking workforce

capability development with continuous governance of agent-enabled workflows. MIRA explains how organizations can orchestrate human, collective, artificial, agentic, platform, and ecosystem intelligence to strengthen sensing, seizing, and reconfiguration capabilities. ASAF complements that capability-building logic by identifying cognitive, operational, digital, organizational, agentic, and risk-and-compliance friction that can offset the intended value of autonomous systems. Together, the frameworks position workforce transformation and agent governance as mutually dependent elements of organizational design.

The model has practical value for managers because it connects skills architecture, human oversight, workflow redesign, recurring audit activity, and performance measurement in a closed-loop implementation approach. However, MIRA and ASAF are analytically derived frameworks rather than empirically validated causal models. Their effects may vary by industry, regulatory environment, task interdependence, data quality, workforce readiness, and agent autonomy. The six propositions therefore establish a future research agenda involving longitudinal, cross-industry, and multi-level studies. Such research should test whether joint investment in workforce adaptability and recurring governance produces stronger and more sustainable organizational value than either intervention implemented independently.

Declarations

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Conflict of Interest

The author declares no conflict of interest.

Data Availability

No original datasets were generated or analyzed because this article presents a conceptual synthesis.

Ethics Statement

Ethical approval was not required because the study did not involve human participants, animals, or identifiable personal information.

AI Use Statement

This document was developed with the assistance of generative AI tools, which supported structural organization, and synthesis of publicly available research.

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