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AI GOVERNANCE AS AN INTEGRAL COMPONENT OF BUSINESS PROCESS TRANSFORMATION

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УПРАВЛІННЯ ШТУЧНИМ ІНТЕЛЕКТОМ ЯК НЕВІД'ЄМНА СКЛАДОВА ТРАНСФОРМАЦІЇ БІЗНЕС-ПРОЦЕСІВ

The article offers an in-depth and systematic analysis of the evolution of approaches to organizational governance in the era of digital transformation, emphasizing the structural reconfiguration of Business Process Management (BPM) under the influence of autonomous artificial intelligence (AI) systems. It reveals how AI governance has evolved from a static set of external ethical guidelines into a comprehensive operational environment that supports the traceability, auditability, and dynamic oversight of agentic workflows. The research highlights how the integration of autonomous agents reshapes managerial logic, allowing enterprises to transition from rigid control hierarchies to adaptive, outcome-driven systems where human expertise and algorithmic autonomy function in tandem. The study identifies key technological and methodological trends, including the rise of the "Agentic Enterprise," multi-agent orchestration hubs, and "AI action" economies, which illustrate the deep convergence between corporate governance and automated process execution. Methodologically, the paper employs an integrative review approach, synthesizing theoretical frameworks from recent BPM scholarship (2022–2025) with quantitative industry forecasts to model the "Agentic Enterprise" paradigm. This approach allows for the conceptual bridging of static governance theories with dynamic, future-state operational models, examining how structural, relational, and procedural governance mechanisms expand the capabilities of BPM beyond traditional automation. The article also synthesizes practical insights on the shift from "human-in-the-loop" to "human-on-the-loop" supervision, demonstrating how embedded governance impacts process resilience, trust, and the scalability of intelligent operations. Special attention is devoted to the challenges of the 2026 landscape, such as accountability gaps in multi-agent systems, the opacity of autonomous decision-making, and the risks of "hallucinations" in high-stakes workflows. To address these issues, the paper proposes a conceptual framework of embedded AI governance, where control points are integrated directly into the process lifecycle rather than applied as an external overlay. This model fosters sustainable transformation, operational transparency, and the emergence of "trust-as-a-service" capabilities that enable organizations to safely leverage the full potential of autonomous intelligence. The findings expand theoretical understanding of socio-technical management systems and provide actionable recommendations for reimagining organizational roles in an AI-saturated business environment.

У статті запропоновано глибокий та систематичний аналіз еволюції підходів до організаційного управління в еру цифрової трансформації з акцентом на структурну реконфігурацію управління бізнес-процесами (BPM) під впливом автономних систем штучного інтелекту (ШІ). Розкрито, як управління ШІ еволюціонувало від статичного набору зовнішніх етичних настанов до комплексного операційного середовища, що підтримує простежуваність, аудитуваність та динамічний нагляд за агентними робочими процесами. Дослідження висвітлює, як інтеграція автономних агентів змінює управлінську логіку, дозволяючи підприємствам переходити від жорстких ієрархій контролю до адаптивних, орієнтованих на результат систем, де людська експертиза та алгоритмічна автономність функціонують у тандемі. Визначено ключові технологічні та методологічні тренди, зокрема становлення "Агентного підприємства" (Agentic Enterprise), хабів мультиагентної оркестрації та економік "дій ШІ" (AI action economies), що ілюструють глибоку конвергенцію між корпоративним управлінням та автоматизованим виконанням процесів. Методологічно в роботі застосовано підхід інтегративного огляду, який синтезує теоретичні засади новітніх досліджень у сфері BPM (2022–2025 рр.) та кількісні галузеві прогнози для моделювання парадигми "Агентного підприємства". Цей підхід уможливорює концептуальне поєднання статичних теорій управління з динамічними операційними моделями майбутнього, розкриваючи, як структурні, реляційні та процедурні механізми врядування розширюють можливості BPM за межі традиційної автоматизації. У статті також синтезовано практичні інсайти щодо переходу від нагляду типу "людина-в-контурі" (human-in-the-loop) до "людина-над-контуром" (human-on-the-loop), продемонстровано вплив вбудованого управління на операційну стійкість, довіру та масштабованість інтелектуальних операцій. Особливу увагу приділено викликам ландшафту 2026 року, таким як прогалини у підзвітності мультиагентних систем, непрозорість автономного прийняття рішень та ризики "галюцинацій" у критично важливих робочих процесах. Для вирішення цих питань запропоновано концептуальну структуру вбудованого управління ШІ, де контрольні точки інтегруються безпосередньо у життєвий цикл процесу, а не накладаються як зовнішній шар. Ця модель сприяє стійкій трансформації, операційній прозорості та появі можливостей "довіри як послуги" (trust-as-a-service), що дозволяють організаціям безпечно використовувати повний потенціал автономного інтелекту. Результати розширюють теоретичне розуміння соціотехнічних систем управління та надають дієві рекомендації для переосмислення організаційних ролей у бізнес-середовищі, насиченому ШІ.

Key words: AI governance, business process management, agentic enterprise, autonomous agents, operational resilience, multi-agent systems, embedded controls.

Ключові слова: управління штучним інтелектом, управління бізнес-процесами, агентне підприємство, автономні агенти, операційна стійкість, мультиагентні системи, вбудовані засоби контролю.

PROBLEM STATEMENT AND ITS RELATION TO IMPORTANT SCIENTIFIC AND PRACTICAL TASKS

The rapid diffusion of artificial intelligence (AI) technologies has fundamentally altered approaches to the design and transformation of business processes. AI is increasingly embedded not only as a decision-support tool but also as an autonomous actor capable of executing process activities, making recommendations, and triggering actions across operational, managerial, and customer-facing processes. As organizations adopt agentic systems, governance becomes a multi-stakeholder operating problem rather than just an internal company policy. At the same time, the growing role of AI in operational decision-making has intensified the relevance

of AI governance, understood as the system of principles, rules, roles, and control mechanisms that guide the development, deployment, and use of AI systems. While AI governance is often discussed at societal or regulatory levels, firms face a critical gap: the need for an actionable internal governance decomposition. From a practical perspective, organizations that implement AI-driven process transformations without embedding governance mechanisms into process architectures face increased operational, legal, and reputational risks. This gap highlights the need to rethink AI governance as an internal structural element of process design — where governance is not "after the fact," but designed into the workflow. The rise of autonomous agents creates a fundamental conflict between deterministic process modeling — where

workflows follow fixed, pre-defined paths — and probabilistic AI agency, where workflows are emergent and non-deterministic. Traditional governance models rely on static checkpoints (gates) which are rendered obsolete by the speed and autonomy of agentic workflows. Consequently, this article addresses the critical theoretical gap regarding the design of dynamic control structures capable of governing non-deterministic business processes without stifling their efficiency.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Academic discourse on the integration of AI into business architectures can be categorized into two distinct but converging streams: structural governance and processual transformation. The first stream focuses on the "entities" of governance. Enholm et al. (2023) and Ben Dhaou et al. (2025) provide the foundational decomposition of governance into objects (data, models, systems), laying the groundwork for assigning decision rights. Papagiannidis et al. (2025) expand this by arguing that effective governance requires a triad of structural, relational, and procedural practices to ensure responsible adoption.

The second stream, processual transformation, addresses the flow of work. Rosemann et al. (2024) identify three essential drifts in BPM — adaptivity, data intensity, and AI-infusion — arguing that processes are becoming fluid entities that require traceability "baked in" to the lifecycle. Pisoni & Moloney (2024) operationalize this by proposing embedded control points within the BPM lifecycle itself.

Complementing these streams, recent scholarship anchors governance in ethical and regulatory frameworks. Bello y Villarino & Bronitt (2024) demonstrate that compliance is fundamentally a process management issue, while Madanchian & Taherdoost (2025) and Ghosh et al. (2025) emphasize the risks inherent in algorithmic autonomy.

Despite these contributions, a gap remains in unifying these perspectives. Existing research often treats governance as a static overlay rather than a dynamic component of the process architecture. This article seeks to bridge this gap by integrating the structural governance models into the adaptive process lifecycles described by Rosemann and others.

PURPOSE OF THE ARTICLE

The purpose of this article is to provide a theoretical justification for the role of AI governance in the transformation of business processes and to identify mechanisms for integrating governance principles into organizational process architectures.

MAIN RESEARCH FINDINGS AND DISCUSSION

The transition to the agentic era represents the empirical realization of agency theory in information systems, where the human principal delegates decision-making authority to an artificial agent. Unlike traditional software tools that wait for input, the research identifies that in 2026 the dominant paradigm will shift to a fully

agentic operating model. This projection is supported by Creatio company, whose analysis suggests that enterprise automation is moving toward autonomous execution [1]. Furthermore, the World Economic Forum argues that this shift requires a 360-degree governance approach to ensure systemic resilience [2]. In this model, autonomous agents possess the capacity to plan, reason, and execute end-to-end workflows without constant human intervention.

The evolution validates the essential drifts in BPM described by Rosemann et al., specifically the drift toward agency and autonomy, where processes act as independent entities rather than passive descriptions of work [3]. In this new environment, organizations do not merely use AI; they reorganize their operating models around it. The workforce structure evolves into a Work Twin model, where human employees lead digital teammates, shifting the managerial focus from task execution to outcome supervision. This transition creates an automation-augmentation paradox, where increasing autonomy requires more sophisticated, rather than less, human oversight to manage the expanded decision space.

Modern process transformation is no longer defined by isolated automation scripts but by the orchestration of multi-agent systems (MAS). In 2026, enterprises will utilize networks of specialized agents (e.g., a Sales Agent collaborating with a Legal Agent) that share context and dynamically divide tasks. To prevent fragmentation, CRM and BPM platforms have evolved into the orchestration hubs or the brain of the enterprise. These hubs maintain the shared memory and context required for agents to collaborate across functional silos (sales, service, marketing). This aligns with the governance of AI systems framework proposed by Enholm et al., who argue that governance must target the system architecture rather than just individual models [4].

The research highlights a fundamental shift in procurement and value measurement. Budgets are moving away from static SaaS licenses (paying for seats) toward AI action economies, where value is defined by the specific, autonomous outcomes delivered (e.g., resolved cases rather than software access). This necessitates a new governance layer focused on value attribution and algorithmic accountability.

To scale agentic systems responsibly, governance cannot be an external compliance overlay; it must be treated as a structural design element within the BPM lifecycle. This integration mirrors the framework proposed by Ben Dhaou et al., who emphasize that governance must be decomposed into specific objects — data, models, and systems — to remain effective [5]. It is recommended viewing these integration points as a cybernetic control loop, ensuring that governance is continuous rather than episodic:

— design phase (democratized control): no-code platforms have emerged as the primary engine for application development, allowing business teams to design processes using natural language. However, this democratization requires security-by-design frameworks where IT governs the ecosystem (the guardrails), while business users govern the logic. This mirrors the structural governance practices identified by Papagiannidis et al.,

Table 1. Comparative Analysis of the Evolution of AI Governance and Operating Models

Dimension	Co-pilot Era (2024)	Agentic Era (2026)
Operational logic	Assistive: requires human initiation and verification for every step	Autonomous: goal-oriented systems that plan and execute end-to-end tasks
Human role	Human-in-the-loop: the human is the pilot, performing the majority of the work	Human-on-the-loop: the human acts as an agent boss, focusing on high-level oversight and strategy
Governance model	Static compliance: document-based policies and manual checklists	Dynamic AgentOps: real-time monitoring, automated guardrails, and drift detection
Architecture	Siloed features: AI embedded as isolated features within legacy software	Orchestration hubs: multi-agent ecosystems coordinated through a central «brain»
Value metric	Productivity: measured by time saved on manual digital tasks	Outcomes: measured by business results and «AI actions» delivered

Sources: created based on [1; 3; 4; 6; 10; 11].

emphasizing clear role definition between technical and business stakeholders [6];

— execution phase (runtime oversight): high-autonomy workflows require formalized human-in-the-loop and human-on-the-loop checkpoints. Research indicates that trust in 2026 is achieved through explainability artifacts — audit logs that allow humans to trace why an agent made a specific decision, thus preventing hallucinations in critical paths. Such oversight mechanisms are essential to mitigate the algorithmic risks identified by Ghosh et al. and to address the ethical governance gaps highlighted by Madanchian & Taherdoost [7, 8];

— new organizational roles: governance is operationalized through the emergence of distinct roles such as Agent Ops teams, Agent Trainers, and Agent Supervisors. These roles are responsible for the procedural aspect of governance — monitoring agent performance, refining their knowledge base, and intervening during exceptions.

The transition from assistive (Co-pilot) to agentic AI requires a fundamental rethink of governance structures. As noted by Bello y Villarino & Bronitt, this necessitates a shift where corporate governance evolves from a legalistic compliance function into a proactive regulatory mechanism [9]. The following comparative analysis summarizes this shift (table 1).

CONCLUSIONS AND DIRECTIONS FOR FURTHER RESEARCH

The study demonstrates that business process transformation in 2026 has crossed a tipping point where AI governance is no longer a peripheral compliance activity but the foundational operating fabric of the enterprise. In an agentic economy, the most valuable AI feature is not speed, but trust. This trust is enabled only through clear auditability, explainability, and the relational alignment of stakeholders. Successful transformation requires that governance matures alongside AI adoption. It must shift from static, manual checks to embedded, automated guardrails that function in real-time. Organizations that

embed governance into the orchestration layer achieve higher strategic resilience. They can scale intelligent efficiency while maintaining accountability, effectively resolving the tension between autonomy and control.

Future research should focus on the empirical validation of these agentic frameworks in highly regulated sectors, such as community banking and the public sector, where the cost of error is high. Additionally, there is a critical need to develop quantitative indicators (KPIs) for assessing the effectiveness of AgentOps in transformed business processes, specifically measuring the return on trust and the reliability of autonomous decision-making.

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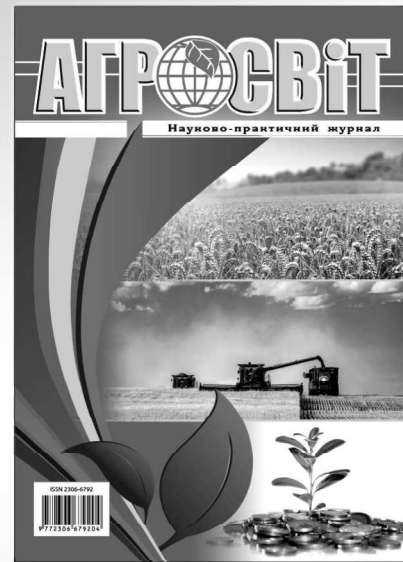
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