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Intelligent Steering Triplet: Towards Proactive Management Through AI

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Abstract

Organizational performance management relies on the Objective–Indicator–Lever triplet, which structures the translation of strategy into operational actions. In complex and uncertain contexts, the classical model shows its limitations: low adaptability, lack of responsiveness, and difficulty in anticipating problems. This paper proposes an intelligent steering triplet based on Artificial Intelligence (AI) to predict indicators and optimize action levers. The approach transforms the Objective–Indicator–Lever loop into a self-learning and adaptive system, capable of adjusting in real time to environmental changes. The model provides proactive, flexible, and predictive management while facilitating fast and effective decision-making without relying on formal multicriteria methods.

Keywords: steering triplet, artificial intelligence, intelligent management, forecasting, optimization.

I. Introduction

Organizational performance management is a key strategic challenge for modern companies, requiring the translation of strategy into effective operational actions and measurement of results. Traditionally, it relies on the Objective–Action Lever–Performance Indicator triplet [1–5], structuring the relationship between organizational goals, deployed resources, and measurable outcomes. However, in complex and uncertain environments, the classical model has limitations: low adaptability, lack of responsiveness, and difficulty anticipating emerging issues, which may lead to delayed or ineffective decisions affecting overall performance. To address these challenges, this paper proposes an intelligent steering triplet based on Artificial Intelligence (AI). This system transforms the Objective–Lever–Indicator loop into a self-learning, adaptive model capable of predicting key indicators and optimizing levers in real time, enabling proactive, flexible, and predictive management without relying on complex multicriteria methods. The paper is structured as follows: Section 2 reviews literature on performance management and AI; Section 3 presents the methodology and intelligent triplet; Section 4 discusses managerial implications; Section 5 concludes and suggests future research directions.

II. Literature Review

A. Organizational Performance Management

Organizational performance management involves guiding, measuring, and adjusting activities to achieve strategic objectives, ensuring coherence between strategy and operational actions by translating orientations into measurable objectives and concrete actions [3], [4], [6]. Traditional approaches rely on performance indicators and dashboards, providing mainly retrospective or real-time views [7]. This allows organizations to detect deviations, interpret results, and trigger corrective actions.

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However, recent studies highlight limitations of this approach in complex, dynamic environments, particularly in responsiveness, anticipation, and continuous adjustment [8]. Literature increasingly calls for agile, forward-looking management, where evaluation goes beyond recording results to become a continuous process of learning, anticipation, and transformation [9]. Such an approach enables organizations to adapt proactively, maintain alignment with strategic goals, and enhance overall performance in rapidly changing contexts.

B. The Steering Triplet

According to [3], effective management relies on the Objective–Action Lever–Performance Indicator triplet. Objectives define expected outcomes and translate strategy and priorities [10]. Action levers are the means, processes, and initiatives deployed to achieve objectives, forming the basis for operational decisions. Performance indicators measure action effectiveness and monitor progress, ensuring strategic and operational alignment [1], [11]. This triplet forms a structured management system that coordinates actions and continuously evaluates performance [12]. Management structures consist of interdependent decision centers (Figure 1) connected by vertical subordination links and horizontal coordination links, ensuring coherence across levels [1], [11].

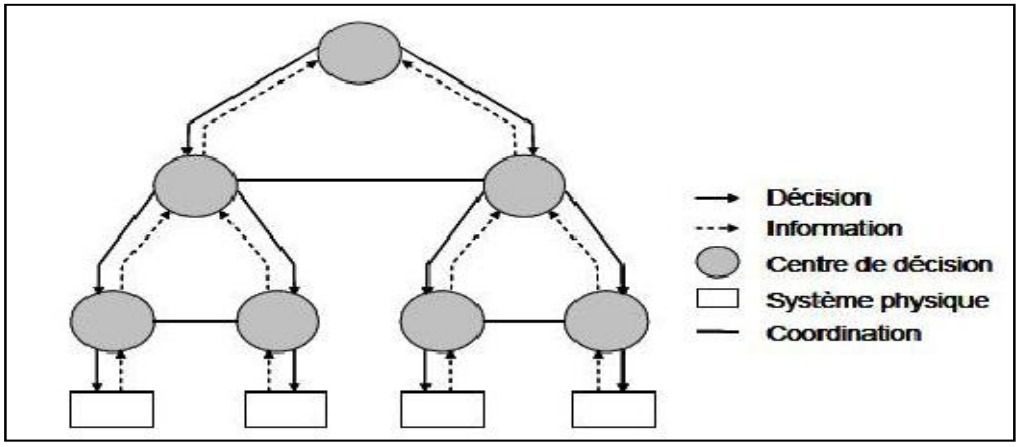

Figure1:Example of a steering structure [11]

The “golden triangle of management” (Figure 2) links each indicator to actionable levers [2].

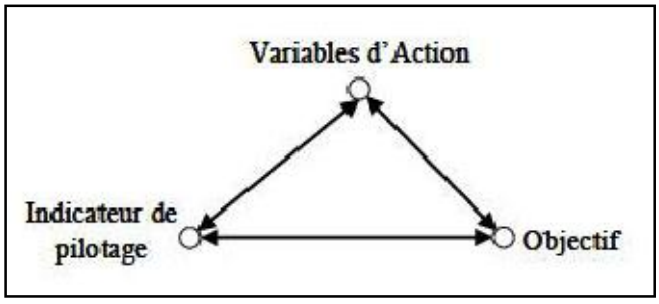

Figure2: The Golden Triangle of Management [2]

While foundational, the classical triplet is often reactive and inflexible in complex or uncertain environments, highlighting the need for intelligent, adaptive methods integrating artificial intelligence to address rapid changes, logistical disruptions, or technological shifts (Table 1).

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Table1: Comparison of the Advantages and Limitations of the Classical Triplet

Triplet Element	**Advantages of Classical Management**	**Limitations of Classical Management**
Objectives	- Clear alignment with strategy - Structured and hierarchical vision(strategic→ tactical→ operational) - Facilitates internal communication	- Slow adaptation to changes - Based solely on historical data - Limited consideration of rapid or unforeseen variations
Action Levers	- Concrete and well-defined actions - Clearly assigned responsibilities - Operational management easy to understand	- Late(reactive)adjustments - Difficulty in selecting the appropriate lever in complex situations - High level of expertise required for manual decision- making
Performance Indicators	- Objective and standardized measures - Ability to monitor deviations - Simple tools(dashboards)	- Post-event measurement(not predictive) - Too many indicators→ Information overload -Risk of fragmented and non- systemic management
Triplet as a Whole	- Strategic coherence - Robust and widely recognized management model - Solid foundation for structuring performance	- Descriptive vision only - Limited foresight - Does not manage uncertainty or complex interactions - Does not enable proactive management

C. Artificial Intelligence and Organizational Management

The introduction of artificial intelligence (AI) into organizational management overcomes the limitations of classical approaches. AI techniques, such as machine learning, enable prediction of key indicators based on historical trends and future scenarios, optimization of action levers by identifying the most effective actions, and real-time decision adaptation, creating self-learning systems. Recent studies show that AI enhances responsiveness, accuracy, and agility in logistics, production, and supply chain management [13], [14]. It also strengthens dynamic evaluation by enabling intelligent KPI monitoring and early detection of underperformance [9]. AI-augmented management systems foster continuous learning, improving coherence between objectives, levers, and indicators. However, their adoption is constrained by data availability and quality, organizational analytical maturity, model complexity, and cultural and managerial barriers [8].

D. Summary and Identified Gaps

Classical methods remain limited, lacking proactive and predictive management. AI studies focus on specific functions without an integrated approach. There is a need to transform the classical triplet into an intelligent system that predicts, adjusts, and optimizes objectives, levers, and indicators, forming the basis of the intelligent management triplet.

III. Methodology: The Intelligent Management Triplet

A. Concept of the Intelligent Triplet

The intelligent management triplet retains the classical components of the Objectives–Action Levers – Performance Indicators triplet and enriches them with artificial intelligence. The goal is to transform a

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reactive system into a proactive and adaptive system capable of predicting key indicators, optimizing action levers, and adjusting decisions in real time according to environmental variations. This approach allows for anticipating potential issues and maximizing action effectiveness while maintaining alignment with strategic objectives.

B. Model Architecture

The model comprises three interdependent elements: Objectives, defined by organizational strategy, Action Levers, adjustable processes and resources to achieve objectives; and Performance Indicators, measuring action effectiveness and progress. The intelligent triplet adds a self-learning loop: AI analyzes historical and real-time data, recommends lever adjustments, and optimizes actions, whose results are measured via the indicators.

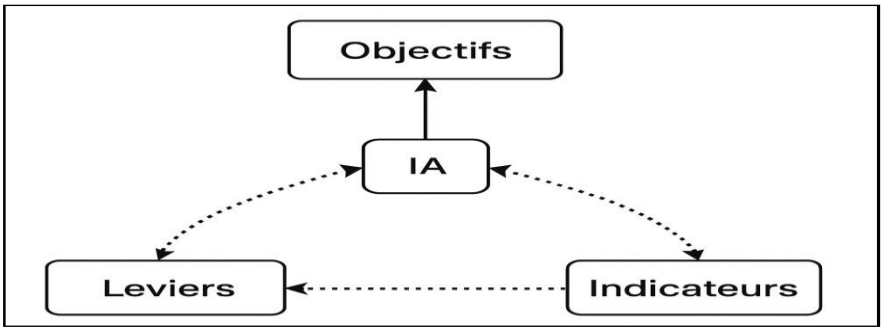

Figure2: Adaptive Flow Diagram of Objectives–Levers–Indicators with AI

C. Role of Artificial Intelligence

AI is central to the intelligent triplet: it predicts indicators using machine learning or time series analysis, optimizes levers by suggesting the most effective actions within operational constraints, and adapts levers in real time based on deviations between forecasts and actual results. Python is essential for developing and automating these functions.

D. Advantages Compared to the Classical Model

The intelligent triplet enables proactive management by anticipating issues, ensures flexibility through real-time adjustments, supports fast, informed decisions based on reliable data, and simplifies operations without requiring complex formal multicriteria methods.

Table 2: Comparison of Features and Outcomes of the Classical Triplet vs. the Intelligent Triplet

Element	**ClassicalTriplet (Objectives–Levers– Indicators)**	**IntelligentTriplet(AI- driven)**
Nature of Decision	Deterministic, based on Human expertise	Data-driven, adaptive Learning
Information Sources	Historical data+ expert judgment	Big data(real-time), IoT, sensors, logs
Objectives	Fixed, defined periodically	Dynamic, readjusted According to AI predictions
Action Levers	Standard processes, Corrective actions	Levers automatically optimized(AI optimization)

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Indicators	Descriptive KPIs(rates, lead times, costs)	Predictive + prescriptive KPIs(anomalies, risks, recommendations)
Responsiveness	Reactive/preventive	Proactive/predictive
Type of Performance Evaluated	Past results(ex-post)	Anticipated future results (ex-ante)
Problem Detection	After deviations occur	Early detection before deterioration
Complexity Handling	Limited, depends on manual analysis	High capacity to handle Complex interactions
Robustness and Accuracy	Average–depends on analytical model	High–automatically updated through learning
Performance Governance	Periodic, based on reports	Continuous, real-time, Autonomous dashboards
Final Outcome	Incremental improvement	Accelerated improvement, self-learning loop

E. Practical Implementation

To implement the intelligent triplet, organizations define objectives, levers, and indicators, collect data, build and deploy an AI model, and continuously adjust decisions. This approach combines strategic rigor with predictive capability, enabling intelligent, adaptive management.

IV. Managerial Implications

A. Transformation of the Management Role

The intelligent management triplet transforms performance management, replacing reactive adjustments with anticipatory, adaptive logic. Managers evolve from analyzing deviations to strategically supervising a self-learning system. Management becomes a continuous process of learning, adaptation, and improvement, shifting from mere control to proactive, dynamic decision-making.

B. Benefits for Managerial Decision-Making

Integrating AI into the Objectives–Levers–Indicators loop offers rapid, informed decision-making, predictive foresight to anticipate deviations, and continuous optimization through learning from historical data. It supports collective performance by providing reliable indicators and guidance, promoting proactive, rational, and results-oriented decisions that enhance organizational adaptability.

C. Conditions for Successful Implementation

The effectiveness of the intelligent triplet requires high-quality, reliable data, analytical and digital skills to interpret AI recommendations, an organizational culture open to innovation and trust in technology, and continued human supervision to validate or adjust AI-proposed decisions.

D. Limitations and Precautions

Despite its advantages, the approach has limitations: AI bias from incomplete data, complex configuration requiring technical expertise, and dependence on technology that may reduce critical thinking. These challenges highlight the need for hybrid management, combining AI and human intelligence to ensure sustainable, ethical, and effective performance.

V. Conclusion and Perspectives

This article presents a conceptual evolution of the classical performance management model based on the Objectives–Action Levers–Performance Indicators triplet. Traditional models show limitations in

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responsiveness, adaptability, and forecasting in complex environments. To address this, the intelligent management triplet integrates AI's predictive and adaptive capabilities into the management loop, transforming a reactive system into a proactive, self-learning system that predicts indicators, optimizes levers, and adjusts decisions in real time. The approach redefines the manager's role as a conductor of an intelligent system, promoting agile, predictive, and value-oriented management. Despite its benefits, limitations remain regarding data quality, technical mastery, and organizational resistance, suggesting future research on sector extension, integration of multicriteria methods, intelligent indicators, and predictive dashboards powered by continuous learning.

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