An AI-Enabled Strategic PMO Framework for Saudi Arabia's Vision 2030[1]

Majid Alhajri and Bob Prieto

This paper aims to address the knowledge gap on integrating Artificial Intelligence (AI) in Project Management Offices (PMOs) dealing with the fast-paced socio-economic changes of the Saudi Vision 2030. This study focuses on empirical, field-based data on Saudi project management specialists. It analyzes how AI technologies can help enhance project control, portfolio visibility, and executive decision-making. This study presents the AI-Enabled Strategic PMO Framework (AISPF) to help organizations implement innovative PMO models that will shift the focus of PMOs from back-office to strategic value-add functions.

Introduction

The Kingdom of Saudi Arabia is attempting one of the largest economic and societal shifts in history with Saudi Vision 2030. The Vision 2030 plan outlines a significant amount of large and complex mega-programs and projects that will transform Saudi Arabia. Within that arena, the Project Management Office (PMO) takes on the main functions of governance, control, and strategic fit.

Increased capital deployment will require more agile management frameworks and approaches. In more resource-constrained environments, local project governance is beginning to leverage AI to enhance delivery within a budget and reduce the time of delivery. Within the GCC region, little empirical research has been conducted on this topic. This paper will outline an approach grounded in local research and type up validated AI frameworks that will support the PMO in addressing Saudi Arabia's national economic challenges and improving strategic fit within the available funding.

Foundations

Modern project management studies show how project governance can be enhanced through AI's capabilities of forecasting, decision making, risk analysis, and data management. Within the project management field, AI's main opportunities lie in planning, measurement of performance, management of uncertainty, scheduling, and making predictive decisions (Taboada et al., 2023; Nenni et al., 2025). Müller et al. (2024) additionally identify the increase in AI use by

[1] How to cite this paper Alhajri, M and Prieto, R. (2026) An AI-Enabled Strategic PMO Framework for Saudi Arabia's Vision 2030, *PM World Journal,* Vol. XV, Issue IX, September 2026.

organizations as a trend, and similarly, address the need for more empirical research as a challenge, in the context of projects.

AI-based forecasting, scheduling, risk assessment, and decision-support systems have the potential to improve a project organization's ability to anticipate and assess deviations and help facilitate more timely management interventions (Taboada et al., 2023; Hashfi & Raharjo, 2023; Nenni et al., 2025). Although a considerable amount of research has been done in this field, empirical evidence and standardized approaches for the incorporation of AI in project management is still lacking and is particularly relevant to the large public and semi-government organizations managing significant capital portfolios and accelerated national transformation programs (Müller et al., 2024; Nenni et al., 2025). This is especially relevant to public and semi-government organizations in Saudi Arabia and the larger GCC, where empirical research is limited and gives this study its focus.

Framework

Adopting a post-positivist research approach, this study assessed primary data collected using a structured, 40-item, Likert-scale survey administered to project management practitioners in Saudi Arabia. Within a consequential validity context, this study examined the impact of the adoption of AI technology on reporting and influencing 'bottom up' the scheduling, forecasting and risk management; 'top down' AI technology on decision making and governance and 'across the board' technology on transparency and performance, value and satisfaction of stakeholders, and project management. Multivariate linear regression framed statistical modeling along with checks of internal consistency and descriptive statistics for the confirmation of operational vectors of the localized project delivery performance driven by technology.

Application

An empirical study of 50 current project management leaders from the Saudi governmental, semi-governmental, private, and consulting sectors, looked at the practical validity of the framework. The sample comprised the senior domain expertise, most of whom had more than 16 years of professional experience in the engineering and delivery domain. Using the predictive model on this sample provided a glimpse into a critical operational reality: although tools designed to automate reporting and data aggregation are the most apparent solutions used today, the rest of the technology ecosystem operates in the early-to-mid stages of advanced technology adoption and thus is a large and largely untapped opportunity for structural performance gains.

The data shows that every one of the operational dimensions analyzed had a positive and statistically significant impact on overall project performance. Straight-line modeling suggests that elevating the use of digital tools has a positive impact on the performance of the delivery.

Multivariate analysis suggests that the reporting tools increase performance through downstream functions. Even the best dashboards can fail to provide performance value if paired with a lack of clear executive decision criteria and real-time assessment of risk along with a failure to implement adequate oversight. Although **Decision Making** and **Governance & Transparency** were a much stronger contenders than the other drivers for overall delivery performance, the results still suggest that technology enables an organization to perform better through the facilitation of better, more informed decisions rather than simply processing results quicker.

Governance & Strategic Implications

In order to implement the above results in corporate and institutional practice, this research presents an **AI-Enabled Strategic PMO Framework (AISPF)**. As a three-pillar framework, AISPF reprioritizes organization's infrastructure around verified performance drivers:

> **Pillar 1: AI-Powered Decision Intelligence:** Institutionalizing predictive analytics dashboards, automated risk-score models, and metrics for portfolio prioritization using data ensures that interventions by executives are both timely and objective. Timely decisions is one of the key objectives of the process.
>
> **Pillar 2: AI-Augmented Governance & Transparency:** Implementation of real-time metrics to provide for stringent alignment, compliance and accountability with respect to large-scale, multi-agency portfolios of capital projects. These health metrics need to become more predictive and anticipatory in nature, and not merely reflective or lagging in nature.
>
> **Pillar 3: AI Strategic Alignment:** Structuring long-term capital investments around predefined, systemic milestones that map directly to the overarching strategic goals of Vision 2030. Enablement of enhanced systemic capital efficiency is an overarching outcome.

Executive leadership must ensure that the organization is ready to implement this change by developing their data literacy and capacity to do so, ultimately making this change and turning the PMO into a predictive, advisory, governance, and management network.

Conclusion

The findings of this study provide the empirical basis for technology-driven project governance in the context of the economic revolution of Saudi Arabia. The results provide empirical support for the claim that the implementation of advanced analytics in PMO is responsible for a significant proportion of variability in the total performance of projects, while institutional decision-making and governance becoming the key drivers of success. Given the increasing investment in the region, future research will benefit from investigating the scalability of the AISPF in other GCC member countries.

Appendix[2]

Table A1: Operational Variables & Performance Predictors

Identifies the predictive weight and relative importance of each automated PMO dimension against Project Performance (R^2 = 0.672, explaining 67.2% of total variance).

Predictive Operational Dimension	Relative Impact Rank	Standardized Impact Path Value (β)	Core Operational Interpretation
Decision Making	1st	+0.307	**Primary performance driver**; predictive decision support yields maximum delivery returns.
Governance & Transparency	2nd	+0.275	**Strong positive driver**; real-time visibility prevents systemic project friction.
Strategic Value	3rd	+0.231	Strategic alignment amplifies realized technological returns.
Risk Management	4th	+0.193	Underpins performance reliability through automated threat modeling.
Stakeholder Satisfaction	5th	+0.178	Supports positive programmatic perception and external alignment.
Scheduling & Forecasting	6th	+0.121	Contributes to baseline schedule defense and timeline optimization.

[2] A copy is available from Majid Sehmi Alhajri at majid.alhajri@daralriyadh.com

Predictive Operational Dimension	Relative Impact Rank	Standardized Impact Path Value (β)	Core Operational Interpretation
AI Adoption & Reporting	Suppressor	–0.231	Negative direct path; administrative deployment lacks value unless filtered into downstream pillars.

Table A2: Operational Construct Measurement Reliability

Verifies the internal consistency and measurement coherence of the survey research instrument across all studied dimensions.

Evaluated Project Management Dimension	Measurement Items	Cronbach's Coefficient (α)	Empirical Interpretation
Project Performance	5 Items	0.871	Excellent; extremely cohesive target metric tracking.
Decision Making	5 Items	0.852	High internal reliability and construct stability.
Governance & Transparency	5 Items	0.841	High internal reliability and construct stability.
Stakeholder Satisfaction	5 Items	0.823	Strong internal consistency.
Strategic Value	5 Items	0.807	Strong internal consistency.
Risk Management	5 Items	0.801	Strong internal consistency.

Evaluated Project Management Dimension	Measurement Items	Cronbach's Coefficient (α)	Empirical Interpretation
Scheduling & Forecasting	5 Items	0.710	Acceptable standard for programmatic evaluation.
AI Adoption & Reporting	5 Items	0.706	Acceptable standard for programmatic evaluation.

Statement on the Use of Artificial Intelligence

Generative AI tools were used during the preparation of this paper for editorial support, including language refinement, clarity, and presentation. The research design, data collection, statistical analysis, interpretation of findings, development of the AISPF, and conclusions are the work of the authors. The authors reviewed and take full responsibility for the final content.

References

Alhajri, Majid S.; The Impact of Artificial Intelligence on PMO Performance, Developing an AI-Enabled Strategic PMO Framework for Saudi Arabia; International Business Academy of Switzerland; Research for Strategic Development – Portfolio Assignment

Prieto, R; Capital Efficiency: Pull All the Levers; Construction Management Association of America (CMAA); August 2014; 978-1-938014-08-6 (eBook); ISBN 978-1-938014-09-3 (Print)

Prieto, R; Governing at the Speed of Reality; Pre-publication (August 2026)

Müller, R., Locatelli, G., Holzmann, V., Nilsson, M., Sagay, T., et al. (2024). Artificial intelligence and project management: Empirical overview, state of the art, and guidelines for future research. Project Management Journal, 55(1). DOI: 10.1177/87569728231225198.

Nenni, M. E., De Felice, F., De Luca, C., & Forcina, A. (2025). How artificial intelligence will transform project management in the age of digitization: A systematic literature review. Management Review Quarterly, 75, 1669–1716. DOI: 10.1007/s11301-024-00418-z.

Taboada, I., Daneshpajouh, A., Toledo, N., & de Vass, T. (2023). Artificial intelligence enabled project management: A systematic literature review. Applied Sciences, 13(8), 5014. DOI: 10.3390/app13085014.

Hashfi, M. I., & Raharjo, T. (2023). Exploring the challenges and impacts of artificial intelligence implementation in project management: A systematic literature review. International Journal of Advanced Computer Science and Applications, 14(9). DOI: 10.14569/IJACSA.2023.0140940.

About the Authors

Majid Alhajri

Dar Al Riyadh, Riyadh,
Kingdom of Saudi Arabia

Majid Alhajri is a senior PMO executive with over 20 years of experience leading strategic portfolios, enterprise PMOs, and complex infrastructure and transformation programs across Saudi Arabia. He specializes in PMO establishment, portfolio governance, project controls, and aligning program delivery with organizational strategy and Vision 2030.

As Director of PMO Services at Dar Al Riyadh, Majid leads multidisciplinary teams delivering PMO consulting and program management services for major government and private-sector clients. He is recognized for improving governance, strengthening executive decision-making, and delivering measurable business value through structured portfolio and program management.

Majid is also the author of the **AI-Enabled Strategic PMO Framework (AISPF)**, developed through research on the impact of Artificial Intelligence on PMO performance, demonstrating how AI can enhance governance, strategic alignment, and organizational performance.

He can be contacted at eng.majid@hotmail.com , majid.alhajri@daralriyadh.com

Bob Prieto

Strategic Program Management LLC
Jupiter, Florida, USA

Bob Prieto is Chairman & CEO of Strategic Program Management LLC focused on strengthening engineering and construction organizations and improving capital efficiency in large capital construction programs. Previously, Bob was a senior vice president of Fluor, focused on the development, delivery, and turnaround of large, complex projects worldwide across all of the firm's business lines; and Chairman of Parsons Brinckerhoff, where he led growth initiatives throughout his career with the firm.

Bob's board level experience includes Parsons Brinckerhoff (Chairman); Cardno (ASX listed; non-executive director); Mott MacDonald (Independent Member of the Shareholders Committee); and Dar al Riyadh Group (current)

Bob consults with owners of large, complex capital asset programs in the development of programmatic delivery strategies encompassing planning, engineering, procurement, construction, financing, and enterprise asset management. He has assisted engineering and construction organizations to improve their strategy and execution and has served as an executive coach to a new CEO. He is author of eleven books, over 1000 papers and National Academy of Construction Executive Insights, and an inventor on 4 issued patents.

Bob's industry involvement includes the National Academy of Construction and Fellow of the Construction Management Association of America (CMAA). He serves on the New York University Tandon School of Engineering Department of Civil and Urban Engineering Advisory Board and New York University Abu Dhabi Engineering Academic Advisory Council and previously served as a trustee of Polytechnic University. He has served on the Millennium Challenge Corporation Advisory Board and ASCE Industry Leaders Council. He received the ASCE Outstanding Projects and Leaders (OPAL) award in Management (2024). He was appointed as an honorary global advisor for the PM World Journal and Library.

Bob served until 2006 as one of three U.S. presidential appointees to the Asia Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC). He chaired the World Economic Forum's Engineering & Construction Governors and co-chaired the infrastructure task force in New York after 9/11. He can be contacted at rpstrategic@comcast.net.