



The Criticality of Technical Program Management in the Age of AI

White Paper

**Written by Omer Hashmi
CEO, Technical Program Management Institute**

LinkedIn: <https://www.linkedin.com/in/omhashmi/>

TPM Institute: <https://tpminstitute.org/>

Prepared for executive, delivery, product, and technology leaders navigating the shift from AI experimentation to enterprise-scale execution.

Contents

- Executive Summary
- 1. Why AI Changes the Delivery Problem
- 2. Defining Technical Program Management
- 3. Why the TPM Role Becomes More Important in AI Programs
- 4. AI Governance Makes TPM Essential, Not Optional
- 5. From Project Manager to Technical Program Leader
- 6. A TPM Operating Model for AI Initiatives
- 7. What Enterprises Should Do Now
- 8. Leadership Implications for the C-Suite, Product, and Engineering
- Conclusion
- References

This white paper synthesizes the attached transcript discussion with external research from PMI, McKinsey, Stanford HAI, NIST, the World Economic Forum, GitHub, and the U.S. Bureau of Labor Statistics. It is designed as an executive discussion document rather than an academic journal article, so citations are consolidated in bracketed form and listed in a reference section.

Executive Summary

Artificial intelligence has changed the speed, scale, and stakes of technology delivery. Organizations are no longer dealing with isolated software projects; they are managing complex portfolios of data, models, cloud services, security controls, governance requirements, vendor ecosystems, and business change all at once. In that environment, execution breaks down when strategy, engineering, and delivery management are separated too sharply.

That gap is precisely where Technical Program Management becomes critical. Technical Program Managers operate at the intersection of technical fluency, program leadership, and adaptive delivery. As discussed in the source transcript for this paper, the role is not simply a relabeled project manager; it is a leadership function designed to translate ambition into feasible architecture, delivery plans, and measurable outcomes. [1]

The age of AI raises the value of this role for four reasons. First, AI programs cross functional boundaries and force tighter coupling between product, engineering, data, security, compliance, and operations. Second, the pace of investment in AI is accelerating, which increases executive pressure for results. Third, organizations are discovering that value does not come from pilots alone; it comes from workflow redesign, governance, and scaled adoption. Fourth, the market is rewarding leaders who combine technical understanding with business acumen and accountability. [2][3][4][5][6][7]

In the age of AI, organizations do not need more status reporting. They need leaders who can convert technical possibility into minimum viable, feasible, governed, and scalable delivery.

1. Why AI Changes the Delivery Problem

The current AI wave is not just another tooling upgrade. It is reshaping work, skills, and enterprise priorities. The World Economic Forum reports that AI and big data rank as the fastest-growing skills through 2030, alongside cybersecurity, technology literacy, resilience, and agility. [2] Stanford HAI reports that organizational AI usage rose sharply in 2024, with 78% of surveyed organizations reporting AI use and 71% using generative AI in at least one business function. [7]

At the same time, the investment environment is intense. Stanford's 2025 AI Index shows corporate AI investment reached \$252.3 billion in 2024, while generative AI investment climbed to \$33.9 billion. [7] McKinsey similarly observes that organizations are now redesigning workflows, elevating governance, and changing operating models to capture value from generative AI rather than merely experimenting with it. [6]

This combination of adoption and investment creates a delivery challenge. AI programs rarely sit cleanly inside one function. They often depend on data quality, model selection, privacy controls, security review, infrastructure scaling, application integration, user enablement, and outcome

measurement. In other words, the technical system and the business system must move together. Traditional handoffs between business sponsors, product teams, architecture teams, engineering teams, and project offices are too slow and too fragmented for that reality.

AI reality	What it means for delivery leadership
Rapid AI adoption	Requires prioritization, sequencing, and cross-functional alignment across many initiatives rather than one-off experiments.
Heavy investment	Raises executive expectations for measurable value, making weak ownership and passive coordination unacceptable.
Workflow redesign	Demands leaders who understand how technology changes operations, not only how to track milestones.
Governance pressure	Adds model risk, privacy, security, and compliance work that must be embedded in delivery instead of bolted on later.

2. Defining Technical Program Management

The transcript underpinning this paper describes Technical Program Management as a blend of three capabilities: technologist, program manager, and agilist. [1] That framing is powerful because it captures the real nature of modern execution. A TPM must understand enough technology to challenge assumptions, enough program structure to coordinate dependencies and risk, and enough adaptive delivery to sequence work iteratively and intelligently.

This is different from pure coordination. In the TPMP view expressed by Omer Hashmi, the role is accountable for helping define what is feasible, not simply documenting what others decide. [1] That means TPMs ask better questions earlier: What is the minimum viable feasible product? Which dependencies create the highest integration risk? What technical shortcuts create unacceptable future drag? What governance controls must be designed into the program from the beginning?

PMI's 2025 Pulse report supports the same directional shift, arguing that business acumen is becoming a critical differentiator and that project professionals must evolve from tactical troubleshooters into strategic value creators. [3] In an AI environment, the TPM role embodies that shift. The TPM is expected to connect value, feasibility, sequencing, and execution discipline.

3. Why the TPM Role Becomes More Important in AI Programs

AI amplifies ambiguity. Teams can move quickly with copilots, foundation models, APIs, and managed platforms, but speed at the keyboard does not remove complexity at the system level. GitHub research shows that developers using Copilot completed a coding task 55% faster in a controlled experiment, and later survey work found that time saved is often reinvested in collaboration, learning, and system design. [8][9] Those are meaningful gains, but they also shift more attention toward architecture decisions, integration, quality, and business tradeoffs.

This is where the TPM becomes a force multiplier. The more engineering teams can accelerate local work, the more valuable it is to have someone managing the system of work above the team level: dependencies, release sequencing, technical tradeoffs, value hypotheses, cross-team risk, executive communication, and adoption planning. AI increases the need for orchestration because it lets more things happen faster, not because it removes the need for orchestration.

The U.S. Bureau of Labor Statistics reflects this structural demand. Employment for computer and information systems managers is projected to grow 15% from 2024 to 2034, with the agency explicitly noting that complexity in AI, cloud, cybersecurity, and digital platforms is increasing demand for leaders who can plan and oversee technology implementation. [10] While TPM is not a BLS occupation code, that outlook supports the broader market logic behind the role.

Core TPM capability	Why it matters more in AI programs
Technical fluency	Can engage engineering, architecture, data, security, and platform teams in substantive tradeoff conversations.
Program integration	Coordinates multiple workstreams, vendors, and release paths into one delivery system.
Business acumen	Connects technical choices to customer value, financial logic, and executive priorities.
Adaptive delivery	Uses iterative methods to reduce risk without losing sight of long-horizon outcomes.
Governance mindset	Builds compliance, privacy, reliability, and model-risk controls into the operating plan.

4. AI Governance Makes TPM Essential, Not Optional

One of the biggest mistakes organizations make is treating AI governance as an external review gate rather than an integrated delivery discipline. NIST’s AI Risk Management Framework was created to help organizations manage risks to individuals, organizations, and society associated with AI. [11] That framing matters because AI risk is not only a legal or policy issue. It affects architecture, data sourcing, model selection, monitoring, security, explainability, escalation paths, and operational readiness.

A TPM is often the most practical owner of that integration layer. Product leaders may own the business case. Engineers may own implementation details. Risk, privacy, and security teams may own control standards. But someone still has to turn those requirements into a coherent execution model. The TPM coordinates that model and ensures governance is reflected in scope, sequencing, testing, release criteria, and operating metrics.

McKinsey's 2025 AI survey reinforces the point by highlighting that organizations capturing value are redesigning workflows and placing senior leaders in critical governance roles. [6] AI governance is not a document; it is a delivery system. Without a technically literate program leader, governance easily becomes either a late-stage blocker or a symbolic exercise divorced from how the product actually ships.

5. From Project Manager to Technical Program Leader

This paper does not argue that every project manager must become a software engineer. It argues that, in technology-heavy environments, the center of gravity is moving toward leaders who can operate credibly across technical and business domains. PMI notes that fluency in the basics of AI is becoming non-negotiable for project professionals and that those who help drive AI adoption will be best positioned for career success. [4]

The transcript used for this paper makes a parallel point: a TPM does not need to build every component personally, but the TPM must understand enough to challenge cost, scope, quality, and technical-path decisions. [1] That resembles the logic of an owner or entrepreneur. The TPM must be able to ask whether a proposed design is overbuilt, whether a simpler path exists, whether dependencies are realistic, and whether the technical approach supports the actual business objective.

In practice, this means the role is evolving from plan stewardship to outcome stewardship. Traditional program controls still matter - roadmaps, risks, dependencies, issue logs, executive communication, and change management all remain essential. But in AI settings, those tools matter most when they are driven by someone who understands the technology deeply enough to convert ambiguity into feasible action.

6. A TPM Operating Model for AI Initiatives

An effective TPM operating model for AI should span six recurring responsibilities:

- Shape the problem: clarify the business outcome, user need, and measurable value before teams commit to a technical direction.
- Define feasible scope: translate the ambition into a minimum viable feasible release, with explicit assumptions and tradeoffs.
- Integrate architecture and delivery: coordinate dependencies across data, model, application, security, infrastructure, and operations.

- Embed governance: convert privacy, security, compliance, and risk requirements into actual work packages and acceptance criteria.
- Drive adoption: plan enablement, process change, stakeholder readiness, and feedback loops so the AI capability is actually used.
- Measure and iterate: monitor value, cost, quality, reliability, and risk after release, then feed that learning into the next cycle.

This model aligns with TPMI's stated vision that IT programs should be run by technologists, while also aligning with external evidence that AI value is tied to operating-model redesign and stronger business acumen. [1][3][6]

7. What Enterprises Should Do Now

For senior leaders, the implication is straightforward: do not treat Technical Program Management as an optional coordination layer. Treat it as an execution capability. Organizations investing materially in AI should assess whether their current program leadership model can do the following consistently: make technically informed tradeoffs, coordinate across functions, embed governance into delivery, and communicate credibly with both executives and engineering teams.

For project professionals, the implication is equally clear. The market is rewarding people who combine technical literacy, business acumen, strategic thinking, and delivery discipline. PMI's job-trends work highlights the growing importance of agility, resilience, problem solving, and strategic thinking in a landscape reshaped by AI. [5] The World Economic Forum adds that technology literacy, AI and big data, cybersecurity, and adaptive human skills are all rising simultaneously. [2] That is effectively the competency map of the modern TPM.

For training and talent leaders, the next step is to build explicit TPM pathways. Not everyone will enter from the same background. Some will come from program management and need more technical depth. Others will come from engineering and need stronger business and delivery skills. The goal is not uniform resumes; it is a reliable capability model for leading complex technology outcomes.

8. Leadership Implications for the C-Suite, Product, and Engineering

The C-suite should read TPM not as an administrative role, but as an operating-model lever. If AI is now a board-level topic, then delivery leadership must be designed with the same seriousness as data governance, cybersecurity, and platform architecture. Executives should ask whether their highest-priority AI initiatives have clear technical-program ownership or whether they are still being coordinated through fragmented committees and passive handoffs.

Product leaders should see TPM as the partner who turns opportunity into executable reality. The most effective TPM-product relationship is not hierarchical; it is complementary. Product defines

value and prioritization. TPM turns that direction into cross-functional execution logic, dependency management, release readiness, and operating discipline. That partnership becomes especially important when AI features have hidden costs in infrastructure, model operations, legal review, or user adoption.

Engineering leaders should see TPM as the person who protects focus while elevating execution quality. The TPM absorbs cross-team integration work, creates clarity around tradeoffs, and makes sure program decisions remain grounded in technical feasibility. In high-change environments, that role reduces churn for engineers and improves executive trust in the delivery system.

The better AI becomes at accelerating local tasks, the more important human leadership becomes at coordinating the whole system.

Conclusion

AI has increased the premium on execution leadership that is both technically credible and commercially aware. As organizations move from pilot enthusiasm to scaled delivery, the central question is no longer whether AI matters. The question is whether the enterprise can repeatedly turn AI possibilities into governed, valuable, resilient, and adoptable outcomes.

Technical Program Management answers that question because it closes the gap between aspiration and implementation. It gives organizations a role designed to connect business intent, technical feasibility, adaptive delivery, and accountable execution. That is why TPM is not a niche specialization in the age of AI. It is becoming one of the defining leadership capabilities of modern digital organizations.

References

- [1] Hashmi, O. and Mantica, D. The Growing Role of the Technical Program Manager. User-provided transcript of LinkedIn Live discussion.
- [2] World Economic Forum. The Future of Jobs Report 2025. <https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/>
- [3] Project Management Institute. Pulse Report 2025: Boosting Business Acumen. <https://www.pmi.org/learning/thought-leadership/boosting-business-acumen>
- [4] Project Management Institute. Shaping the Future of Project Management With AI. <https://www.pmi.org/learning/thought-leadership/shaping-the-future-of-project-management-with-ai>
- [5] Project Management Institute. Project Management Job Trends 2024. <https://www.pmi.org/learning/careers/job-trends>

- [6] McKinsey & Company. The State of AI: How Organizations Are Rewiring to Capture Value. <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-how-organizations-are-rewiring-to-capture-value>
- [7] Stanford HAI. 2025 AI Index Report - Economy. <https://hai.stanford.edu/ai-index/2025-ai-index-report/economy>
- [8] GitHub. Research: Quantifying GitHub Copilot's Impact on Developer Productivity and Happiness. <https://github.blog/news-insights/research/research-quantifying-github-copilots-impact-on-developer-productivity-and-happiness/>
- [9] GitHub. Survey: The AI Wave Continues to Grow on Software Development Teams. <https://github.blog/news-insights/research/survey-ai-wave-grows/>
- [10] U.S. Bureau of Labor Statistics. Computer and Information Systems Managers, Occupational Outlook Handbook. <https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>
- [11] NIST. AI Risk Management Framework. <https://www.nist.gov/itl/ai-risk-management-framework>