

Transformation of the Product Manager Role under Artificial Intelligence Integration

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ABSTRACT

The article examines how artificial intelligence is restructuring product management in digital organizations. The study addresses the growing tension between accelerating automation in delivery routines and the rising demand for strategic product judgment. Its purpose is to determine which layers of product work are being compressed by AI, which functions are expanding, and how the center of gravity of the product manager role is shifting. The analytical design combines source analysis, comparative interpretation, conceptual synthesis, and structural generalization. The materials include recent studies on digital product management, AI adoption in software organizations, human-centered design of AI-enabled work, responsible AI governance, and industry-wide evidence on enterprise implementation. The results show that AI reduces the relative weight of routine coordination, drafting, and first-pass analysis, while increasing the value of system tuning, data instrumentation, human oversight, cross-functional alignment, and organizational governance. Practical applicability lies in redefining product-management competencies, decision architectures, and operating models for AI-integrated product environments.

Keywords: product management, artificial intelligence integration, digital product management, human-AI collaboration, product strategy, data governance, intelligent systems

INTRODUCTION

Artificial intelligence has moved from an auxiliary analytical resource to an operational layer embedded in software delivery, service design, and organizational decision routines. In parallel with this shift, the product manager's work is being reconfigured. Recent large-scale evidence shows that AI adoption in business accelerated sharply in 2024, while companies simultaneously reported stronger attention to risk management, organizational redesign, and value capture [8]. The same trend appears in broader ecosystem assessments: AI is becoming more deeply integrated into workflows, products, and commercial infrastructures, which changes the structure of managerial work rather than merely adding another technical tool.

For product management, the issue is especially acute because the occupation has historically combined coordination, prioritization, translation across functions, and operational decision support. As AI systems absorb portions of documentation, synthesis, prototyping, forecasting support, and routine analysis, the profession faces a structural redistribution of effort. The present question is no longer whether AI enters product work, but which segments of the role lose differentiation value and which become more consequential under conditions of probabilistic systems, rapid iteration, and expanded governance requirements.

The purpose of the article is to identify the direction of transformation of the product manager role in the context of artificial intelligence integration. Three research tasks are addressed: first, to determine which traditional functions of product management are being compressed, retained, or expanded; second, to explain why the role is moving from feature

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coordination toward orchestration of data, feedback loops, and human-AI interaction; third, to define the organizational and governance conditions under which product managers preserve leverage in AI-intensive environments. The scientific novelty lies in treating the transformation of product management as a change in the architecture of managerial value creation rather than as a simple increase in tool usage. The article argues that AI shifts product management upward along the value chain and relocates its comparative advantage into judgment, systems thinking, exception handling, and coordination under uncertainty.

MATERIALS AND METHODS

The source base combines recent studies that illuminate the transformation of product work from complementary angles. V. Corvello [1] examined generative AI through the lens of innovation management and human agency. K. Grigoryan, L. Martin, J. Lamarz, T. Fichtler, B. Hohn, L. Asmar, A. Kühn, and R. Dumitrescu [2] systematized product-management tasks and the data dependencies behind them. V. V. Jensen, A. Alami, A. R. Bruun, J. Stouby, and co-authors [3] analyzed organizational expectations surrounding AI tools in software development. J. Melegati, I. Wiese, E. Guerra, R. Chanin, A. Aldaej, T. Mikkonen, R. Prikladnicki, and X. Wang [4] described the product manager as a multidimensional connector in software startups. H. H. Olsson and J. Bosch [5] proposed strategic digital product management as a framework shaped by data, DevOps, AI, and ecosystem conditions. A. Singla, A. Sukharevsky, L. Yee, M. Chui, and B. Hall [6] provided survey evidence on enterprise AI adoption and the managerial practices associated with value realization. G. Smith, N. Luka, M. Osborne, B. Lattimore, J. Newman, B. Nonnecke, and B. Mittelstadt [7] focused on responsible generative-AI use by product managers and the organizational constraints surrounding ethical action. Stanford Institute for Human-Centered Artificial Intelligence [8] synthesized macro-level evidence on AI adoption, productivity, and market diffusion. H. Subramonyam, D. Thakkar, A. Ku, J. Dieber, and A. K. Sinha [9] explored how collaborative software teams prototype generative-AI systems and how roles shift in that process. A. Witkowski and A. Wodecki [10] mapped where AI enters the product-development and product-management lifecycle and identified unresolved gaps in the literature.

The methodological design relies on comparative analysis, source analysis, conceptual structuring, synthesis, and analytical generalization. These methods were used to reconstruct the changing division of labor inside product management, to compare scholarly and applied interpretations of AI integration, and to formulate an integrated model of role transformation consistent with the article's purpose.

SYNTHESIS OF FINDINGS

The first observable shift concerns the redistribution of effort across product work layers. Earlier descriptions of product management emphasize the profession's connective and integrative character: the product manager coordinates stakeholders, translates across business, design, and engineering, and sustains continuity between user needs and delivery processes [4]. Under AI integration, this connective function does not disappear, yet its operational substrate changes. Drafting routine artifacts, structuring first-pass analyses, creating initial requirement formulations, or generating candidate solution frames now takes less time than before, while the pressure to formulate strategic intent, resolve ambiguity, and sequence decisions across competing constraints becomes stronger [5; 6]. In this sense, AI does not remove product management from the workflow; it strips differentiation away from lower-level execution and exposes the degree to which the profession depends on sensemaking under uncertain conditions.

A second shift appears in the object of management itself. In conventional product environments, the manager could treat the product as a relatively stable bundle of requirements,

releases, and user-facing increments—the literature on AI-enabled product development points in another direction. As AI enters product architecture, the managed object becomes a system with feedback loops, model behavior, data pipelines, monitoring thresholds, intervention rules, and post-deployment adjustment logic [1; 10]. Work on strategic digital product management arrives at a similar conclusion from a different angle: digital product leadership increasingly depends on reasoning about data, experimentation, and ecosystem interdependencies rather than isolated feature delivery [5]. The product manager, therefore, moves from being a steward of backlog flow to an orchestrator of interacting socio-technical mechanisms.

This transition becomes clearer when the role is examined through data dependencies. The task analysis conducted by Grigoryan and colleagues shows that product work is saturated with data requirements across many role clusters [2]. Witkowski and Wodecki, in turn, show that AI applications cut across multiple stages of product development and management rather than occupying a single bounded phase [10]. When these findings are read together, an important implication emerges: data quality, instrumentation quality, and cross-team interpretability of signals are no longer supporting concerns that have been delegated to adjacent specialists. They become part of the product work itself. In AI-intensive settings, a weakly instrumented system undermines prioritization, trust, experimentation, and accountability simultaneously. For that reason, product leverage increasingly depends on the capacity to define what must be measured, how system outputs will be judged, and where human review enters the loop [2; 10].

A further transformation concerns decision logic. Studies of generative AI in knowledge work and collaborative software teams indicate that AI tools perform best when integrated into interpretive workflows rather than treated as autonomous substitutes for expert judgment [9]. The same pattern appears in product-manager-centered research on responsible AI use. Product managers often occupy a gatekeeping role in decisions about data, safeguards, release trade-offs, and acceptable operational risk. Yet, organizations frequently provide incomplete guidance on what responsible action entails in concrete terms [7]. Hence, the value of the product manager shifts toward judgment over task allocation itself: which decisions can be routinized, which require escalation, which outputs are acceptable as drafts, and which demand contextual interpretation before operational use [7; 9].

The organizational consequences are equally substantial. Enterprise survey evidence suggests that AI value creation depends less on isolated experimentation and more on coordinated changes in strategy, talent, operating model, technology, and data [6]. This point aligns with Jensen and colleagues, who show that expectations surrounding AI tools in software organizations are unstable and often revised after practical experience [3]. Product managers, therefore, face a new coordination burden. They must align engineering expectations with business goals, connect model-level capabilities with delivery constraints, and absorb the frictions generated by legal, compliance, trust, and platform stakeholders. Under these conditions, organizational entropy becomes a direct product concern. The product manager's contribution lies increasingly in reducing fragmentation across decision loops that previously operated with looser coupling [3; 6].

Recent macro-level evidence reinforces the direction of this change. The 2025 AI Index reports broad growth in organizational AI usage and a rising body of evidence on productivity effects. Yet, it does not suggest that complex managerial judgment has become redundant [8]. Instead, the broader pattern is one of uneven complementarity: AI improves many bounded tasks, while the harder problem shifts toward integrating those task-level gains into coherent organizational systems. Product management sits precisely at that integration point. As a result, the comparative advantage of the strongest product managers moves toward framing the problem correctly, identifying brittle assumptions, designing intervention points, and

establishing decision accountability for systems whose behavior is dynamic rather than fully deterministic [6; 8].

The transformation described above can be summarized as a shift from delivery-centered to system-centered product management. Figure 1 presents this shift in condensed form.

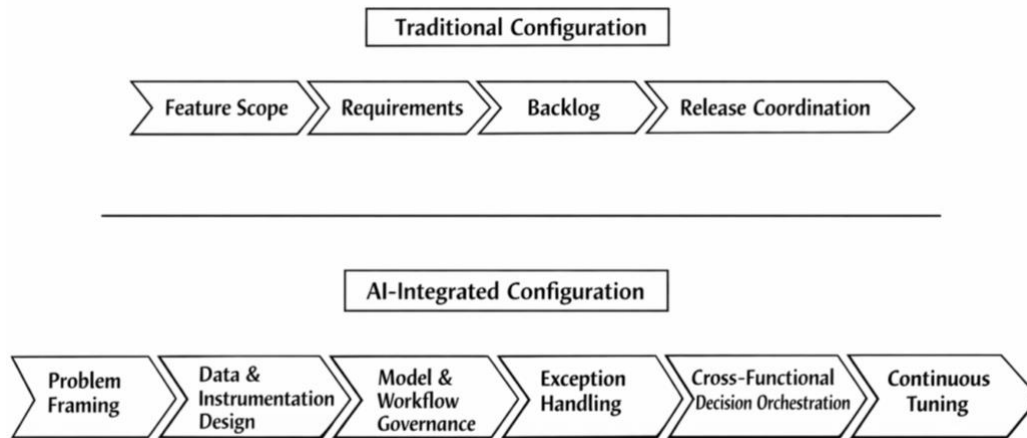


Figure 1. Repositioning of the Product Manager Role under AI Integration (adapted from [5; 10])

Figure 1 shows that AI compresses the procedural middle of product work more than its strategic and integrative layers. The manager’s center of gravity moves upward and outward: upward toward judgment and sequencing, outward toward coordination of data, models, operations, and governance structures.

DISCUSSION

The analytical results suggest that the transformation of product management should be interpreted as a change in the locus of managerial scarcity. Earlier scarcity was tied to coordination overhead, document production, and information aggregation. Under AI integration, these activities become easier to scale. Scarcity migrates toward higher-order synthesis: deciding what deserves optimization, how much autonomy the system can sustain, where the edge cases are likely to accumulate, and which trade-offs remain unacceptable despite local efficiency gains [1; 6; 8]. This reading helps explain why AI adoption often increases the strategic burden on product leaders rather than making the role simpler.

To clarify the shift, Table 1 compares the dominant center of gravity of product work before and after AI integration.

Table 1. Comparative Repositioning of Product Management under AI Integration [2; 4–6; 8; 10]

Dimension	Pre-integration emphasis	AI-integrated emphasis
Core unit of management	Feature, release, requirement set	Adaptive system, decision loop, monitored workflow
Main time sink	Coordination, drafting, and backlog maintenance	Exception handling, sequencing, governance, trust calibration

Evidence base	User input, delivery metrics, market signals	Multi-source signals, instrumentation quality, model behavior, operational feedback
Collaboration pattern	Product-design-engineering triad	Expanded network including data, platform, governance, legal, and trust stakeholders
Source of leverage	Prioritization and communication discipline	Judgment under ambiguity and orchestration across socio-technical dependencies
Failure mode	Misaligned scope or delayed delivery	Weak data foundations, uncontrolled automation, and fragmented accountability

The comparison indicates that AI does not abolish the classic competencies of product management; it alters their hierarchy. Communication remains necessary, but communication detached from system understanding loses force. Prioritization remains necessary, but prioritization without instrumentation becomes shallow. The profession, therefore, becomes less centered on artifact ownership and more centered on governing a moving system whose performance depends on interactions among data quality, model behavior, operations, and human intervention.

A second interpretive issue concerns the boundary between AI assistance and managerial replacement. The literature reviewed here gives little support to a substitution thesis in any strong sense. The more plausible pattern is selective displacement within the execution layer, combined with the expansion of supervision, exception management, and organizational mediation. Product managers remain necessary because AI-generated outputs still require contextual framing, legitimacy within the organization, and alignment with operational reality. Research on responsible generative-AI use by product managers is especially revealing here: responsibility tends to diffuse unless someone actively reconnects principles with concrete decisions [7]. That mechanism reinforces, rather than weakens, the need for product leadership in AI-rich environments.

This interpretation can be refined by examining how decision authority is likely to be distributed across an AI-integrated product workflow (see Table 2).

Table 2. Emerging Allocation of Decision Work in AI-Integrated Product Environments Constructed from [3; 6; 7; 9; 10]

Product work domain	Predominant AI contribution	Predominant PM contribution	Main coordination risk
Requirements and epic drafting	Generate drafts, summarize inputs, propose structures	Validate intent, resolve ambiguity, reject shallow formalization	Mistaking fluency for clarity
Discovery and signal synthesis	Cluster feedback, surface patterns, support exploratory analysis	Distinguish noise from decision-relevant signal	Overconfidence in incomplete patterns
Workflow automation	Execute routine decision paths and trigger actions	Set escalation rules and human review thresholds	Hidden error propagation

AI feature design	Suggest prompt structures, support prototyping, and accelerate iteration	Define user value, safeguards, and evaluation criteria	Shipping technically plausible but weakly governed systems
Post-launch tuning	Monitor outputs and anomalies at scale	Interpret edge cases and decide intervention priorities	Diffused accountability across teams
Responsible use and release	Support documentation and testing routines	Connect governance principles to product decisions	Ethical gaps between policy and practice

Table 2 shows that AI expands the feasible scope of automation, yet the managerial residue that remains after automation is exactly the residue with the highest organizational consequences. The product manager’s domain narrows to routine mechanics and deepens into consequence-bearing judgment. Hence, the future of the profession depends less on competing with AI in document production and more on building robust human-AI work allocation models that preserve accountability where system effects are hardest to predict [3; 7; 9; 10].

LIMITATIONS AND FUTURE RESEARCH

The analytical format used in this article has several limitations. It does not provide a sector-specific empirical test, nor does it measure time redistribution inside actual product teams. It reconstructs a role transformation from converging recent literature and applied reports. For that reason, the conclusions are strongest at the level of conceptual architecture and weaker at the level of quantitative causality. Even so, the practical implications are clear for contemporary product organizations. Recruitment criteria, capability models, and performance evaluation for product managers need revision. Greater weight should be assigned to system framing, instrumentation literacy, governance fluency, and cross-functional integration under ambiguity. At the same time, routine drafting and coordination skills should be treated as necessary but insufficient.

CONCLUSION

The research showed that AI compresses the execution layer of product management, particularly in drafting, first-pass synthesis, and routine coordination, while preserving and expanding activities tied to ambiguity reduction, sequencing, and organizational alignment.

The article showed that the role is moving from feature coordination toward orchestration of intelligent systems. In AI-integrated environments, product work becomes inseparable from data quality, monitoring logic, intervention design, and allocation of authority between automated routines and human judgment.

The research established that product managers' leverage in AI-intensive organizations depends on specific conditions: reliable instrumentation, explicit governance, stable cross-functional interfaces, and decision structures that prevent responsibility from dissolving across teams. Under such conditions, AI does not eliminate the product manager. It raises the profession's strategic altitude and makes its value increasingly dependent on systems thinking, contextual interpretation, and accountable coordination.

LIST OF ABBREVIATIONS

AI: Artificial intelligence
DevOps: Development and operations
PM: Product manager

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