

Generative AI in Product Management and Lifecycle Optimization

Rohan Paliwal¹, Akshit Kurani²

¹Rohan Paliwal, Manager, Product Management, Western Union

²Akshit Kurani, Technical Product Owner, GRUBBRR

Abstract - The rapid evolution of Generative Artificial Intelligence (GenAI) is transforming the role of Product Managers (PMs) by enhancing productivity, cross-functional collaboration, and decision-making across the product lifecycle. This paper explores the ecosystem of GenAI tools—ranging from large language models like ChatGPT and Claude to workflow-specific platforms like Notion AI, Writer, and Atlassian Intelligence—and their practical applications in ideation, planning, design, development, and product launches. This paper uses industry case studies from Atlassian, Amazon, and Stripe to show how GenAI enhances human creativity and strategic alignment in addition to automating repetitive jobs. Additionally, it outlines a readiness framework for organizations to adopt GenAI responsibly. The study concludes that with thoughtful integration, GenAI has the potential to significantly empower PMs and reshape how products are built, launched, and scaled.

Key Words: Generative AI, Product Management, LLMs, AI Tools, Atlassian Intelligence, Product Lifecycle, AI Readiness, Cross-functional Collaboration

1. INTRODUCTION

In recent years, the term AI has become a household name, and it comes as no surprise since AI has a vast majority of uses in real-world applications^[1]. Generative AI (GenAI) specifically is quickly transforming the way products are developed. Today, 71% of organizations report using GenAI in at least one function^[5], and product teams are experimenting with it to tackle urgent challenges: keeping requirements aligned across teams, handling growing complexity, cutting time-to-market, and extracting real-time customer insights. Early adopters report dramatic efficiency gains. In practice, GenAI tools are helping product managers (PMs) streamline workflows, spark ideas, and improve cross-team coordination. With a focus on new tools beyond ChatGPT (such as Claude, Notion AI, and Writer), tangible industry examples, collaborative impacts, ready frameworks, and best practices for responsibly growing AI, this paper examines the current status of GenAI for product management.

2. Generative AI Tools for Product Managers

Apart from famous chatbots like ChatGPT, a growing community of AI tools is becoming common for PMs to use: Large Language Models (LLMs). OpenAI's ChatGPT

and Google's Gemini remain versatile assistants for brainstorming features, drafting user stories, and summarizing research. Anthropic's Claude offers a similar AI writing assistant with an emphasis on safer, more steerable outputs (e.g., Claude 3 has a long context window suitable for lengthy product docs). Enterprise-focused AI writing platforms like Writer offer robust, secure AI agents designed for business needs; for instance, Writer's agents enhance workflows across marketing and product development while prioritizing enterprise-grade security and compliance Knowledge & Research AIs: Search-enhanced AI like Perplexity or Google Bard/Gemini can ingest large amounts of market and technical data to surface insights quickly. Notion AI, integrated into the Notion workspace, can automatically organize meeting notes, suggest action items, and condense long documents (For example, Notion's AI-powered summarization tool is useful for turning long documents into clear, concise summaries.). New tools like ClickUp AI and Coda AI help with project planning and user-story creation. AI-powered image and UI generators-such as DALL·E, Midjourney, and Stable Diffusion-enable teams to rapidly create prototypes for mockups and marketing visuals. Modern prototyping tools with AI capabilities can transform basic sketches or text descriptions into interactive wireframes, accelerating the early stages of design and iteration. Development Assistants: Code-focused assistants (e.g., GitHub Copilot, OpenAI's Code Interpreter, or specialized plugins) help developers by auto-generating code snippets or writing test plans from requirements. Atlassian's new AI features (Atlassian Intelligence) can even "define test plans for product updates in Jira" and generate documentation from Confluence. Collaboration and Productivity: Tools like tl;dv automatically transcribe and summarize meetings (it "captures meeting content, generating instant transcripts and summaries"), allowing PMs to focus on discussion rather than note-taking. Unified inboxes with AI (e.g., Missive) and team assistants (e.g., Slack's AI, Microsoft's Copilot for Teams) help distill discussions and surface decisions. New AI tools are constantly broadening the options available to product managers. For example, a team might use ChatGPT to draft marketing pitches, turn to Gemini or Bard for researching industry data, and leverage Notion AI to summarize meeting notes into actionable user-story checklists. On the enterprise side, platforms like Writer, Anthropic's Claude for enterprise, and IBM Watson are prioritizing security and governance, making it easier for organizations to implement AI solutions at scale.

3. Collaboration, Decision Velocity, and Cross-Functional Alignment

GenAI is not just changing what PMs do, but how teams work together. By automating routine tasks and providing instant insights, it accelerates decision-making and flattens organizational silos. For instance, AI can surface data-driven recommendations during a backlog grooming session or auto-generate proposals when participants are idle, keeping conversations focused and inclusive.

Generative AI is fundamentally changing how software teams collaborate, according to industry experts and recent research. Rather than reinforcing traditional role boundaries, GenAI is driving teams toward more fluid, cross-functional collaboration by blending the responsibilities of product managers, designers, and engineers. This shift means that, instead of working in isolated handoffs, teams are increasingly co-creating in real time, with an AI tool, a design adjustment, or a requirement update becomes a shared activity, facilitated by a common AI assistant.

A study from Stanford University recently showed that using generative AI helps teams work better together. It makes roles more flexible and helps everyone stay on the same page, which cuts down the time it takes to build things and avoids confusion. AI also improves teamwork by breaking down barriers between departments, reducing delays, and making decision-making more open. This way, even teams working from different places can stay connected and focused on the same goals.

Practically, this means a PM might use an AI assistant during a planning meeting to draft feature specs on the spot, while developers instantly prototype and QA write-up tests from those specs. AI-powered summarization (in tools like Atlassian Intelligence) ensures that all team members – from marketing to support – see the latest decisions and rationales. Product launches can move faster when customer feedback is auto-sorted and paraphrased by AI, feeding back into the roadmap without manual digestion.

4. Generative AI Across the Product Lifecycle

4.1 Ideation and Market Research

Product management is becoming increasingly recognized in software development companies^[4]. Within these companies, in the initial phases of product development, product managers are leveraging generative AI to quickly gather and analyze market insights. AI excels at gathering and analyzing online text from many sources, even text in an unstructured format, to spot market gaps, user problems, and complaints, and point to opportunities for new products^[2]. For instance, a product manager might use an AI assistant to distill the main themes from recent

user reviews or to quickly scan industry updates for relevant information.

Creating early versions of products is getting easier thanks to AI tools. These tools let teams quickly build and test new ideas with very little work. Some can even turn basic drawings or short descriptions into working models. There are also templates powered by AI that help turn rough ideas into clear plans for developers. In short, AI is changing how product managers do research, come up with ideas, and plan new features, making everything faster and smoother.

4.2 Roadmapping and Planning

For strategic planning and roadmapping, GenAI aids in data synthesis and timeline estimation. A PM can feed historical project data into an AI to get rough time estimates or to identify dependencies that might delay launch. Story mapping sessions can leverage AI to surface edge cases or generate alternative feature ideas. Some teams use AI to draft release notes or feature briefs: for instance, Amazon's new Enhance My Listing tool uses GenAI to optimize product descriptions and bullet points for marketplace listings – a glimpse of how AI can automate parts of release content creation.

Importantly, AI can act as a bridge in cross-functional alignment. For example, Atlassian Intelligence can draft tweets from Confluence specs or summarize meeting minutes for executives, ensuring that what marketing, sales, and tech think is all grounded in the same vision. Writer's AI platform highlights this bridging effect: "Writer enables us to co-build, combining IT's technical skills and the business's domain knowledge to drive greater impact than we could alone. In other words, PMs can use such AI agents to harmonize input from multiple departments while keeping everyone on the same strategy page.

4.3 Design and Prototyping

In design sprints, GenAI fuels creativity and speed. Product managers often use image-generation models (DALL-E, Midjourney) or AI UI tools to iterate on mockups. Content generation tools (e.g. Jasper, Writesonic) help create user personas, scenarios, or microcopy. AI-powered generative style guides can ensure that any new designs adhere to the brand voice. PMs at companies like Atlassian and Slack are already leveraging AI to generate polished UI copy and design ideas, reducing back-and-forth with design teams.

Industry Example: Atlassian's products now incorporate generative AI to level up design research: their tools can summarize user feedback and even draft initial designs or content suggestions, allowing product teams to test concepts faster than manual research would allow.

4.4 Development and Testing

Throughout the development phase, GenAI supports tasks such as coding, testing, and ensuring quality. GitHub Copilot and similar tools auto-complete code and test cases from simple prompts, boosting developer productivity. Within Jira Software, Atlassian Intelligence uses generative AI to automatically create test plans for new product releases. Users can simply prompt the AI, which then generates structured test plans tailored to the update, streamlining the quality assurance process. This feature is designed to help product managers and developers quickly outline necessary testing steps, ensuring comprehensive coverage without manual drafting, reducing manual workload for PMs and QA leads. Teams are also experimenting with LLMs to analyze telemetry data or logs: for example, feeding crash reports into an AI to get a prioritized summary of root causes.

Cross-functional workflows change here too: designers may adjust prototypes in response to instant AI-driven user-testing simulations, and developers can get AI-generated documentation of their code for PM review. Error-fixing cycles are shortened by this continuous feedback loop, which helps ensure alignment between the product vision and what's built.

4.5 Launch, Marketing, and Growth

During the go-to-market phases, GenAI streamlines the analytics and content production processes. AI copywriters generate product descriptions, marketing emails, and help-center articles at scale. The Amazon Enhance My Listing feature is a prime example – it uses GenAI to “save sellers time” by refreshing product listings with on-trend language. Similarly, PMs can use AI to draft press releases or update FAQs.

After a product launch, GenAI enables ongoing monitoring of customer feedback, sales trends, and usage data to evaluate product performance and identify growth opportunities. Tools can automatically parse review sentiment, segment users based on behavior (via AI-driven analytics), and even suggest next features by identifying unmet needs in feedback. Stripe's leadership, for example, has highlighted that pairing GenAI with data analytics enables teams to “execute projects and solutions with speed,” compressing time-to-market in sectors from healthcare to manufacturing. In summary, AI speeds up not only execution but the entire product learning loop, so teams can iterate on growth ideas far more rapidly.

5. Industry Examples of GenAI in Product Management

Atlassian: They launched Atlassian Intelligence in 2023, adding AI features to tools like Jira and Confluence. These updates help teams save time by automating tasks,

creating content, and making everyday work easier within the platforms. It can summarize meeting decisions, draft user stories, and generate test plans automatically. Early access customers report faster sprint planning and fewer misaligned requirements. This example shows how a tooling vendor uses GenAI to empower PMs and engineers alike.

Amazon: Enhance My Listing, a GenAI tool that allows marketplace vendors to automatically update product titles and bullet points, was launched by Amazon. While aimed at sellers, it demonstrates AI streamlining content workflows in product catalogs. Internally, Amazon teams also use LLMs for tasks like code review and product recommendations, though specific case studies are often proprietary.

Stripe (Sessions 2023): Stripe's teams, including Product and Engineering, have been public about using GenAI in their product development cycle. In a Stripe Sessions panel, GitHub and ServiceNow CPOs discussed encouraging “agile technical experimentation” with AI and embedding AI experts within product teams to drive outcomes. They emphasize planning AI investments by evaluating emerging use cases and adapting culture accordingly, a lesson for PMs looking to scale AI.

Other organizations (e.g., Netflix, Google) are experimenting with GenAI for personalization and user insights, although details are often internal. In general, leading tech companies are embedding generative features directly into products and processes – the takeaway for PMs is to identify specific tasks (like drafting or summarizing) where AI pilots can deliver quick wins.

6. Evaluating AI Readiness and Frameworks for Adoption

Deploying GenAI successfully requires more than buying tools; it calls for an organizational foundation. A structured readiness framework helps PMs and leaders assess whether their team and company are prepared. Experts suggest evaluating factors such as data infrastructure, model governance, and culture. For example, a recent AI-readiness guide notes that 92% of companies plan to invest in AI, yet only ~1% feel “AI mature”^[6]. In other words, the gap between ambition and capability is wide.

Key readiness components include strategy alignment, workforce readiness, data management, and governance. This means product teams should ask: Do we have high-quality data (or documentation) to feed into AI? (Content is the “cornerstone” of GenAI success.) Have we set up guidelines on what data is private vs. shareable? Are stakeholders trained to craft good AI prompts and interpret AI outputs? Are roles defined for monitoring AI outputs and handling errors?

Practical tools include AI maturity assessments and pilot workshops. For instance, AIIM's generative AI readiness questionnaire provides interactive assessments to "evaluate your organization's readiness for GenAI. PMs can also run internal surveys: e.g., Gauge how comfortable team members are with AI tools, or inventory which tasks each role could delegate to AI. MIT Sloan's capstone projects illustrate another approach: student teams worked directly with companies (Pfizer, Comcast, etc.) to prototype GenAI solutions, highlighting that pairing AI with data analytics "helps companies execute projects and solutions with speed. Product teams could emulate this via hands-on workshops, having PMs and cross-functional members co-develop simple AI integrations (e.g., pilot a chatbot for customer FAQs) to reveal friction points and learn requirements.

Organizations should also plan for change management. Case studies and surveys show many AI pilots stall on cultural issues or misaligned expectations. Building psychological safety is crucial: teams where members feel free to experiment (fail small, learn fast) tend to get higher returns from GenAI. Regular training sessions, AI ambassadors or "power users" among product staff, and transparent discussions about AI's role can help. Leaders must define clear policies: who reviews AI outputs, how to label AI-assisted content, and how to handle mistakes.

On the technology side, PMs can adopt evaluation checklists: Does the company have centralized AI governance (e.g., an AI steering committee)? Are data catalogs and lineage tracking in place so AI outputs are traceable? For example, embedding data lineage tracking and bias-checking tools into the AI development process is a best practice to ensure ethical use.

In summary, PMs should not rush headlong into GenAI without this groundwork. Using frameworks – whether from Gartner, McKinsey, or platforms like Whatfix's AI Readiness model – helps ensure that when teams do plug in generative tools, they can scale them smoothly. A readiness framework will include checkpoints like: Legal/Compliance (e.g., privacy laws), Talent/Skills (do our PMs know prompt-crafting?), and Change Process (is there a change-management plan for new tools).

7. Ethical AI and Governance in Product Management

As GenAI is scaled up, ethical considerations become critical. PMs must ensure that AI-driven features and processes remain trustworthy. Key principles include transparency, fairness, and accountability. In practice, this means:

Data Governance: Maintain clear rules about what data is fed into AI models. For instance, including personal customer data may trigger GDPR or CCPA rules.

Establishing comprehensive data catalogs and lineage tracking lets teams know "where AI training data comes from and how it's used," which improves accountability.

Bias Detection and Explainability: Incorporate automated checks so models cannot leak sensitive data or produce biased recommendations. Best practices are to use bias-detection tools on training data and choose models with explainability features, ensuring outputs can be audited by a human if needed.

Security and Privacy: Work with IT on secure deployment. Enterprise AI tools (like Writer for enterprise or Anthropic's business offerings) emphasize private clouds and non-training policies to protect company IP. PMs should collaborate with IT security to apply standard software security practices to AI, such as access controls on who can query certain models.

Continuous Monitoring: AI governance is ongoing. After deployment, product teams need dashboards or alerts for emerging issues (e.g., an AI component generating harmful content). A leading AI governance guide stresses that "AI systems must be continuously monitored for emerging ethical issues like bias". This could be as simple as periodic reviews of AI-generated content by the product team, or automated monitoring if volume is high.

Ethics also extends to user experience. PMs should be transparent with users when AI is involved (e.g., marking AI-written content) and provide opt-outs where appropriate. Ultimately, adopting responsible AI practices not only avoids legal risks but also builds user trust in a product.

8. Conclusion and Future Directions

Generative AI is transforming product management from end to end. By automating routine tasks and surfacing new insights, it lets PMs focus more on strategy and innovation. This review has shown that today's GenAI tools – from chatbots to design and meeting AIs – are already delivering measurable productivity gains. Companies like Atlassian and Amazon are embedding AI into their product processes, achieving faster development and higher-quality outputs. The integration of artificial intelligence (AI) into product lifecycle management (PLM) represents a transformative opportunity for organizations seeking to enhance innovation, efficiency, and competitiveness in today's dynamic business environment^[3].

Looking ahead, enterprises need to invest in AI readiness and change management. Only with the right infrastructure and culture can organizations reap the full benefits of GenAI. Frameworks that align strategy, data, people, and governance will be essential. Future work might involve collecting survey data on PM tool usage and

outcomes or running collaborative workshops to co-design AI-enhanced workflows. The evolving role of the PM will likely include being an “AI integrator” – someone who not only uses AI tools but also shepherds their adoption and governance across teams.

Finally, as AI becomes more powerful, ethical considerations must keep pace. Scalable guardrails – such as automated bias checks and explainable AI practices – should be baked into the product lifecycle. By doing so, product managers can ensure that generative AI amplifies human creativity and speed responsibly, rather than becoming a black box. In short, GenAI offers enormous promise for product teams, but realizing it requires thoughtful planning, the right tools, and a culture ready to embrace this technology.

REFERENCES

- [1] A. Kurani, P. Doshi, A. Vakharia, and M. Shah, “A Comprehensive Comparative Study of Artificial Neural Network (ANN) and Support Vector Machines (SVM) on Stock Forecasting,” *Annals of Data Science*, vol. 10, 2023, pp. 183–208, doi:10.1007/s40745-021-00344-x.
- [2] R.G. Cooper, “The AI transformation of product innovation,” *Industrial Marketing Management*, vol. 120, May 2024, pp. 1–15, doi:10.1016/j.indmarman.2024.02.008
- [3] Optimizing Product Lifecycle Management with AI: From Development to Deployment. *IJBMV [Internet]*. 2023 Mar. 17 [cited 2025 May 10];6(1):36-42.
- [4] O. Springer and J. Miler, “A comprehensive overview of software product management challenges,” *Empirical Software Engineering*, vol. 27, no. 5, Article 106, May 2022, doi:10.1007/s10664-022-10134-5
- [5] <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai>
- [6] <https://blog.prem.ai.io/enterprise-ai-trends-for-2025-whats-next-for-businesses/>