

Making Sense of AI Across the Product Lifecycle: Product Management, Leadership, and Human–AI Boundaries

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Abstract

Artificial intelligence (AI) is rapidly reshaping product management work across industries, challenging established leadership practices, learning trajectories, and organisational boundaries. As product managers increasingly operate in complex, data-rich environments, understanding how AI enhanced tools augments human decision-making across the product lifecycle has become a critical managerial and scholarly concern.

The aim of this study is to explore how product managers make sense of artificial intelligence as a change agent across the product lifecycle, and how AI reshapes the boundaries between human judgement, leadership, and automated support in everyday product management practice. Methodologically, the study combines a structured literature synthesis with an empirical qualitative study based on semi-structured interviews with experienced product managers from diverse domains, complemented by survey-based skills mapping. The analysis adopts a lifecycle perspective spanning early discovery, development, launch, and post-launch phases.

The findings show that AI use is currently front-loaded, delivering the greatest value in early lifecycle stages such as market research, customer insight synthesis, ideation, and requirement definition. In later stages, AI primarily functions as analytical and operational support, while more autonomous lifecycle orchestration remains largely aspirational. Importantly, AI does not replace product leadership but redistributes work: analytical and

writing tasks are increasingly augmented, while prioritisation, problem framing, empathy, and leadership remain distinctly human-centred.

The study contributes to debates on AI-enabled leadership by illustrating how product managers negotiate the boundaries between human judgement and AI-supported work, and how learning and leadership practices evolve as AI-tools become embedded across the product lifecycle.

Keywords: Artificial intelligence, Product management, Product lifecycle, Leadership, Sensemaking, Human–AI collaboration, Organisational learning