Chapter 6
How AI and Analytics Are Reshaping Talent Management

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ABSTRACT

Artificial Intelligence and analytics are not merely enhancing talent management—they're rewriting its core logic. As organizations transition from reactive to predictive HR models, the integration of AI offers an unprecedented capacity to match individuals to roles, predict turnover, personalize learning, and optimize performance. Yet, this shift brings more than just technical upgrades. It challenges traditional notions of leadership, fairness, and human judgment. The chapter explores how AI transforms every facet of the talent lifecycle—from recruitment and onboarding to development and retention—while critically examining the tension between efficiency and empathy. Drawing on real-world applications and emerging research, it argues for a balanced approach: one that harnesses data without losing sight of the human spirit that drives organizational success. As we stand on the cusp of a data-defined future, the key is not just in adopting AI, but in aligning it with values that make work meaningful and equitable.

INTRODUCTION

Rewriting the Playbook: Why Talent Management Can No Longer Ignore the Machine We are living through a moment of rupture—an age in which organizations are rethinking what it means to find, nurture, and retain talent. Talent management,

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once driven by human intuition, hierarchical structures, and largely analog processes, is being fundamentally reshaped by forces that are computational, algorithmic, and increasingly autonomous (Wiblen, 2024). Artificial Intelligence (AI) and data analytics are no longer future possibilities on the HR horizon; they are active, evolving players in how we evaluate potential, understand performance, and forecast human capital needs.

The promises are seductive: better hiring decisions, reduced bias, personalized learning paths, predictive models that flag flight risks before they materialize, and performance assessments rooted in behavioral data rather than office politics. The modern workplace, increasingly defined by complexity and constant change, demands agility—something traditional HR frameworks have historically struggled to deliver (Bhanumathi & Hemavathi, 2025). Enter AI, not as a replacement for human insight, but as an amplifier of it—at least, in theory.

Yet we cannot gloss over the friction. This transformation brings unease alongside excitement. How much control are we willing to relinquish to algorithms? Can machine-driven systems truly "read" human potential, or do they flatten it into numbers and patterns? Does the data serve the person, or is the person reduced to the data? These questions are not rhetorical—they're being answered in real time by HR professionals, organizational leaders, and policymakers grappling with both the power and peril of these technologies.

What's unfolding is not merely a shift in tools but a paradigm shift in how we conceptualize work and worth. Where once resumes, references, and face-to-face interviews served as the backbone of hiring and evaluation, we now see machine learning systems parsing video interviews for micro-expressions, natural language processing engines decoding cover letters for emotional tone, and predictive analytics assigning "potential scores" to candidates based on past performance patterns.

This chapter seeks to untangle the promise from the peril. It begins by tracing how AI and analytics have entered the talent management space—what they offer, where they thrive, and where they fail (Charlwood, 2021). It examines not only the technical but also the ethical and organizational implications. Talent management is, at its core, a human endeavor (Kayyali, 2025 A). The irony of this digital revolution is that it may ultimately force us to revisit what we value most in human potential—and how we choose to define, measure, and honor it in a world increasingly mediated by machines.

If we get this right, AI could help create more equitable, personalized, and forward-thinking work environments. If we get it wrong, we risk turning people into metrics and letting bias hide behind black-box algorithms. Either way, the future of talent management will not be written by HR alone—it will be co-authored by data scientists, ethicists, engineers, and above all, the people whose careers will rise or fall by the models we design today.