Chapter 9
Talking to AI-Driven Project Management:
Practical Strategies for Prompt Engineering and Ethical Integration

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ABSTRACT

The integration of Artificial Intelligence (AI) and Natural Language Processing (NLP) into project management has transformed how professionals approach planning, execution, and decision-making. Among these advancements, Large Language Models (LLMs) such as ChatGPT have emerged as powerful tools, enabling project

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managers to streamline workflows, improve collaboration, and derive actionable insights. This chapter, "Talking to AI: Prompt Engineering for Project Managers," focuses on the critical skill of prompt engineering, which involves crafting precise, context-aware instructions to optimize the value of AI-generated outputs. Effective prompt engineering bridges the gap between human intent and AI capabilities, ensuring that responses are relevant, actionable, and aligned with project objectives. The chapter highlights how poorly structured prompts can lead to generic or irrelevant outputs, while well-designed queries can address key project needs, such as generating schedules, identifying risks, and automating stakeholder reports

1. INTRODUCTION

In the contemporary landscape of project management, Artificial Intelligence (AI) is rapidly reshaping workflows, improving efficiency, and assisting in critical decision-making. One of the most groundbreaking AI innovations is **Large Language Models (LLMs)**, which have revolutionized how project managers interact with data and utilize communication tools. These models, powered by vast datasets and sophisticated machine learning algorithms, enable project managers to generate insights, improve task execution, and optimize collaboration. Among the most widely recognized LLMs, **ChatGPT** has emerged as an example of how AI can be leveraged to streamline project management processes. However, to maximize the benefits of these models, understanding how to effectively communicate with them, also known as **prompt engineering**, is essential. This chapter explores the definition, capabilities, and applications of LLMs in project management and emphasizes the importance of crafting the right prompts for these models.

1.1 What are Large Language Models (LLMs)

Large Language Models (LLMs) are a class of AI systems capable of understanding and generating human-like text based on vast amounts of data. These models are based on **transformer architectures**, which excel in processing long sequences of text and recognizing context. By training on vast corpora, LLMs can generate coherent and contextually appropriate text, making them ideal tools for handling natural language tasks such as summarization, translation, and question answering (Shum & Downey, 2023). Models like **ChatGPT**, developed by OpenAI, have become particularly popular in both business and academic contexts due to their ability to assist in complex language-based tasks. The capabilities of LLMs extend well beyond simple text generation. These models are also proficient in tasks such as data analysis, risk identification, and predictive analytics, which are