

Talking to AI:

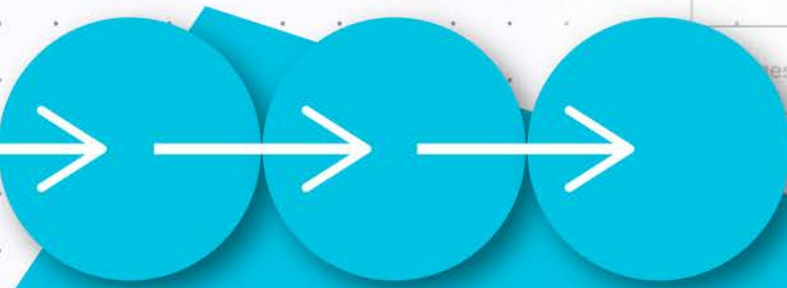
Prompt Engineering For Project Managers Workbook

You are a detail-oriented healthcare project manager with 10 years of experience in facility renovations and construction management. You take pride in your work. Your...

You are a detail-oriented healthcare project manager with 10 years of experience in facility renovations and construction management. You...
potential risks in the renovation project to transform a designated wing into a functional...
on-delays, budget overruns, patient safety, hospital operations during construction, and...
oints: Ensure compliance with healthcare regulations and safety standards. Consider the...
Types of Output: Format the risk register as a table. Evaluation Criteria: Quality: ...
Impact and probability. Stakeholder Satisfaction: Confirm the risk mitigation plans...
risk register in table format you create should identify at least 10 risks, identify the...
ct, and provide detailed mitigation plans

healthcare project manager, your task is to identify potential risks in the renovation project to transform a designated wing into a functional...
of clinic. Here are some potential risks related to construction delays, budget overruns, patient safety, hospital operations during...
ction, and other potential major risks:

Risk	Likelihood	Impact	Mitigation Plan
Delays in obtaining necessary permits and approvals	High	High	Ensure all necessary permits and approvals are obtained well in advance of construction start date.
Unforeseen site conditions	Medium	High	Conduct a thorough site assessment prior to construction start date to identify any potential issues.
Inadequate contractor performance	Medium	High	Conduct a thorough vetting process for contractors and establish clear performance expectations in the contract.
Changes in project scope	Medium	High	Establish a clear change management process and ensure all changes are approved by relevant stakeholders.
Budget overruns	High	High	Establish a clear budget and contingency plan, and closely monitor expenses throughout the project.
Incidents during construction	Medium	High	Establish clear safety protocols and procedures for patients and staff during construction.
Disruption to hospital operations	High	High	Develop a detailed construction schedule that minimizes disruption to hospital operations.



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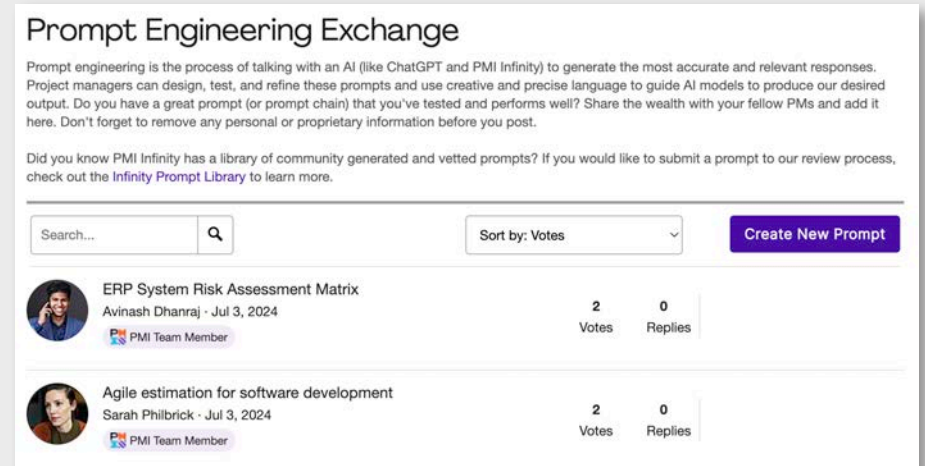


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INTRODUCTION

Welcome



Workbook Overview

This workbook mirrors the PMI x AI “Talking to AI: Prompt Engineering for Project Managers” course’s structure. Starting with the basics and progressing to more advanced approaches, it offers detailed summaries of each module, practical examples, and relevant use cases. Additionally, it provides an array of tools including checklists, spreadsheets, and discussion questions to deepen your understanding and facilitate hands-on learning.



Course Companion

Designed to enhance your learning experience, this workbook serves as a vital companion and is referenced throughout the modules. It simplifies complex course information into clear summaries and equips project managers with practical tools for prompt engineering. In the pages that follow, you’ll find prompts that you can test, use, and adapt in addition to various checklists and templates designed for practical use. Use this workbook to reinforce your knowledge, apply what you’ve learned, and enhance your skills in AI prompt engineering.



Sharing

Feel free to share this workbook with colleagues or on social media with anyone who might benefit from it. Download the templates to use within your team or organization, facilitating collaboration and streamlining prompt engineering processes. Sharing this resource empowers others to enhance their skills and knowledge in AI prompt engineering.

Determining Whether GenAI is the Right Solution



Checklist

Explore whether GenAI is the right solution for your project management needs with this comprehensive checklist, designed to guide you through key considerations and decision-making factors.

- ✓ 1 Identify repetitive and time-consuming tasks or tasks that can use the help of a knowledgeable assistant
- ✓ 2 Determine if the task can be performed, improved, or automated using generative AI
- ✓ 3 Evaluate the complexity of the problem
- ✓ 4 Consider if the problem requires creative solutions or ideas
- ✓ 5 Assess the potential benefits of using generative AI
- ✓ 6 Identify the limitations and risks associated with using generative AI
- ✓ 7 Make an informed decision based on the above factors

Step 1

Identify repetitive and time-consuming tasks or tasks that can use the help of a knowledgeable assistant

- Look for tasks that you perform frequently and take up a significant amount of your time
 - Examples: Creating project status reports, updating project schedules, or generating meeting minutes
- Alternatively, look for tasks where you can use the help of a knowledgeable assistant to provide guidance or advice when you don't have sufficient expertise or knowledge.

Step 2

Determine if the task can be performed, improved, or automated using generative AI

- Assess if the task follows a consistent structure or format
- Will the task make use of the data the AI system has been trained on from other sources, or do you need it to only interact with your own data?
- Check if the necessary data and information are available in digital format, and ensure the information contains no personal identifiable information (PII) or other content you don't want on a public large language model (LLM)
 - Example: If project status reports follow a template and the data is available in a project management tool, generative AI can automate the report creation process

Step 3

Evaluate the complexity of the problem

- Determine if the problem involves analyzing large amounts of data or requires considering multiple variables and scenarios
- Assess if the problem can be broken down into smaller, more manageable subproblems or subtasks
 - Example: Analyzing project risks and their impact on the project timeline and budget can be complex, but generative AI can help process the data and provide insights

Step 4

Consider if the problem requires creative solutions or ideas

- Identify if the problem can benefit from brainstorming sessions, novel ideas, or guidance rooted in expertise and knowledge from external sources
- Determine if the problem requires thinking outside the box or exploring unconventional approaches
 - Example: Generative AI can help brainstorm ideas for team-building activities or suggest innovative ways to communicate project updates to stakeholders

Step 5

Assess the potential benefits of using generative AI

- Evaluate if using generative AI can save time, increase productivity, or improve the quality of your output
- Consider if generative AI can provide valuable insights, support decision-making, or enhance problem-solving capabilities
 - Example: Using generative AI to analyze project performance data can provide insights that help optimize resource allocation and improve project outcomes

Step 6

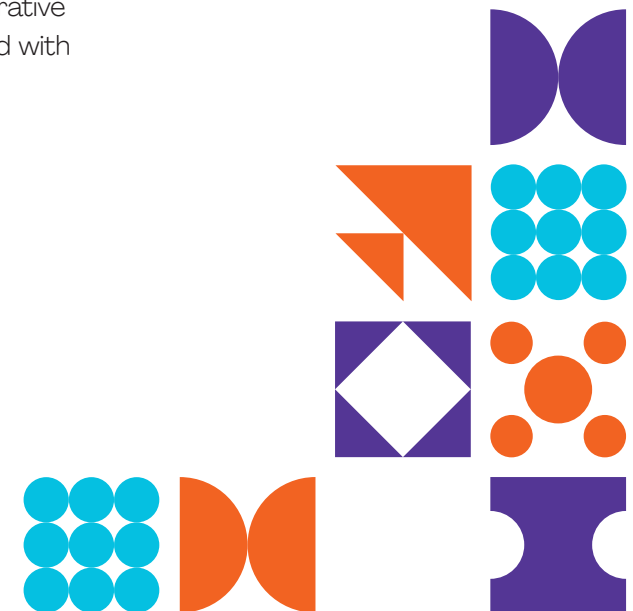
Identify the limitations and risks associated with using generative AI

- Consider the potential risks related to data privacy, security, and algorithmic biases
- Determine the level of accuracy required and how you'll verify the quality of outputs
- Assess if the generated output requires human oversight or validation
 - Example: When using generative AI to analyze sensitive financial data, ensure that appropriate security measures are in place and that a human expert reviews the output

Step 7

Make an informed decision based on the above factors

- Weigh the potential benefits against limitations and risks
- Determine if using generative AI aligns with your project goals and priorities
 - Example: If the benefits of automating project status reports outweigh the effort required to set up and maintain the generative AI system, proceed with implementation



Ethical, Secure, and Compliant Use of LLMs

While AI offers immense potential for enhancing project management, it's essential to prioritize ethical, secure, and compliant use of AI tools.

Maintaining ethical standards and data security involves several crucial considerations:

- validation checks
- data augmentation
- confidentiality
- adherence to ethical guidelines

By implementing these strategies, project managers can mitigate risks associated with AI usage and ensure that AI-powered tools contribute positively to project outcomes while upholding ethical standards.

Be sure to reference our checklist [on page 24](#) for a comprehensive guide to implementing these considerations effectively.



1

DESIGNING PROMPTS

Summary

What is Prompt Engineering?

In today's rapidly evolving world of artificial intelligence and natural language processing, project managers are increasingly turning to generative AI systems powered by large language models (LLMs) like ChatGPT, Infinity, Gemini, and Claude to streamline workflows and enhance project outcomes. These models have the potential to revolutionize project management tasks, from generating documentation to analyzing data and providing insights. However, to fully harness the power of these models, project managers must master the art of prompt engineering.

Prompts are your input into generative AI systems to obtain specific results. **Prompt engineering** is a vital skill that involves the meticulous crafting, testing, and refining of prompts to guide generative AI models toward accurate, relevant, and useful outputs. This process is essential for optimizing workflows, boosting productivity, and driving project success. Effective prompt engineering requires several key strategies: crafting specific and structured prompts, providing relevant context, setting the appropriate tone, including examples, experimenting and refining prompts, understanding the audience, using clear language, incorporating structure, and adding reliability checks.

What is Prompt Engineering? (continued)

A fundamental aspect of prompt engineering is its iterative nature. Project managers continuously refine their prompts based on feedback and observations of the LLM's behavior, striving to achieve repeatable, specific outcomes. This iterative approach mirrors the agile approaches often employed in project management, emphasizing adaptability and continuous improvement.

Prompt engineering empowers project managers to tailor LLM-generated responses to complement existing project workflows. Whether it's generating initial drafts of project documents, conducting analyses, or facilitating communication with stakeholders, well-crafted prompts can significantly enhance the efficiency and effectiveness of AI-powered tools.

It's important to recognize that while generative AI can be a powerful ally in project management, it isn't without its limitations. Project professionals play a crucial role in overseeing AI-generated outputs, ensuring they align with project requirements and objectives. While AI can automate certain tasks, it shouldn't replace human oversight entirely, especially in areas where accuracy and completeness are paramount.

Components of an Effective Prompt

Effective prompts serve as the blueprint for AI-generated responses, guiding the model toward producing relevant and actionable outputs.

Effective prompts rely on several integral components:

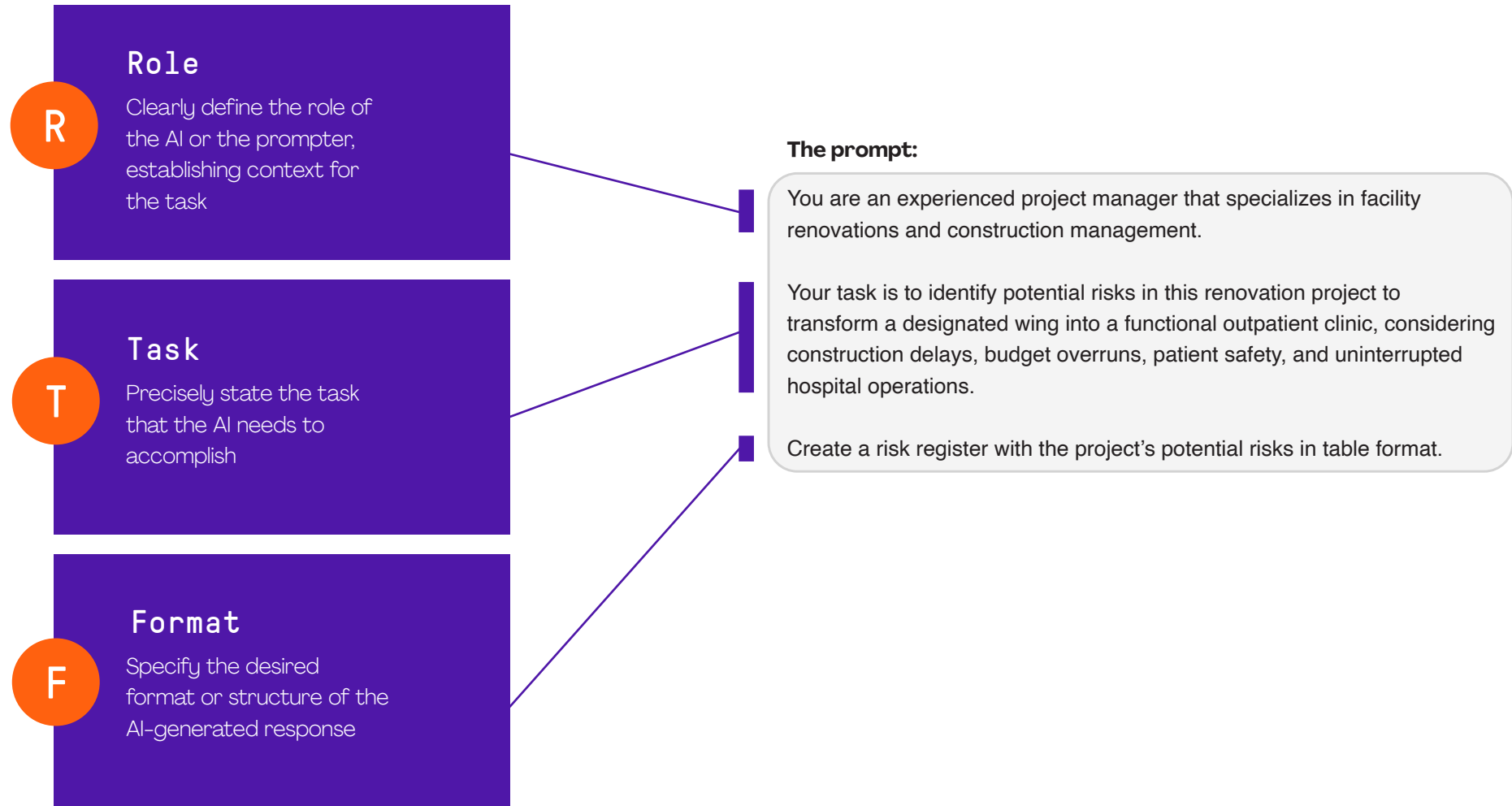
- **specificity**
- **context**
- **tone**
- **examples**
- **experimentation and refinement**
- **clarity**
- **audience awareness**

By incorporating these components into their prompts, project managers can maximize the utility of AI tools and streamline project workflows effectively. Additionally, maintaining clarity and structure in prompts facilitates comprehension by both AI models and human stakeholders, further enhancing their effectiveness. Don't forget to consult our checklist [on page 23](#) for a comprehensive guide to crafting effective prompts.

The RTF Formula

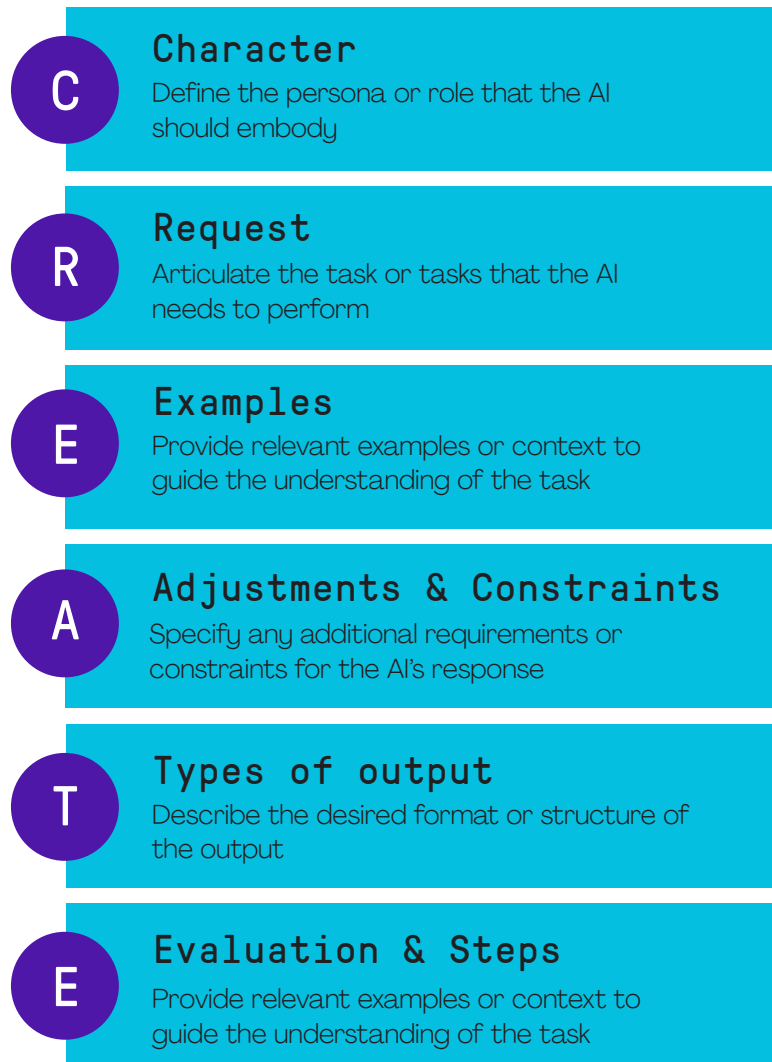
Prompt formulas provide a structured approach to prompt engineering, offering project managers a framework for crafting effective prompts. There are many formulas, each with various advantages. Check out our table of various formulas, their advantages, and components [on page 20](#).

One such formula is the **role, task, and format (RTF) formula**, which simplifies the prompt into three key elements:



The CREATE Formula

The CREATE formula expands upon the RTF formula, providing a more comprehensive framework for prompt engineering. It consists of six key components:



The prompt:

You are a detail-oriented experienced project manager that specializes in facility renovations and construction management. You take pride in your work.

Identify potential risks in the renovation project to transform a designated wing into a functional outpatient clinic.

I've uploaded tables, other projects' completed risk register templates that identify risks related to construction delays, budget overruns, patient safety, hospital operations during construction, and other potential risks.

Ensure compliance with healthcare regulations and safety standards. Consider the impact on existing hospital operations and patient care.

Format the risk register as a table.

Comprehensiveness: Ensure all relevant risks are identified, including construction delays, budget overruns, patient safety, hospital operations during construction, and other potential risks. Check if compliance with healthcare regulations and safety standards is adequately considered.

Accuracy: Verify the risks are accurately categorized and described. Ensure that risk mitigation strategies are realistic and actionable.

By incorporating each element of the CREATE formula into prompts, project managers can ensure that AI-generated responses are tailored to their specific needs and objectives. This holistic approach fosters clarity, precision, and alignment with project goals, ultimately enhancing project outcomes.

RTF versus CREATE

Comparing the RTF and CREATE formulas highlights the strengths and applications of each approach in prompt engineering.

While the RTF formula offers simplicity and efficiency for straightforward tasks, the CREATE formula provides a more robust framework for managing complex scenarios.

Project managers may choose the appropriate formula based on the nature and complexity of the task at hand, ensuring that prompts effectively guide AI models toward generating relevant and accurate responses.

Experimenting with different prompting approaches and personas enriches the interaction with AI, enabling project managers to explore diverse paths and refine their prompts iteratively. By leveraging the strengths of both the RTF and CREATE formulas, project managers can harness the full potential of AI to drive project success.

Using the RTF formula

As a healthcare project manager, it is important to identify potential risks in any renovation project to ensure the safety of patients and the success of the project. Here is a risk register with possible risks for the renovation project to transform a designated wing into a functional outpatient clinic:

Risk	Description	Impact	Likelihood	Severity	Mitigation
Construction Delays	Delays in construction due to unforeseen circumstances such as weather, material shortages, or labor issues	Delayed project completion, increased costs	Moderate	High	Regular communication with construction team, contingency plan for delays
Budget Overruns	Unforeseen expenses or changes in project scope leading to increased costs	Reduced funding for other hospital projects, potential project cancellation	Moderate	High	Regular budget monitoring, contingency plan for unexpected expenses
Patient Safety	Safety hazards during construction or inadequate safety measures for patients during renovation	Patient injuries or harm, potential lawsuits	Low	High	Regular safety inspections, clear communication with construction team about safety protocols
Hospital Operations	Disruption to hospital operations due to construction noise, dust, or other factors	Reduced patient satisfaction, decreased hospital revenue	Moderate	Moderate	Regular communication with hospital staff, contingency plan for disruptions

This response is powered by OpenAI's GPT.

Related

- What are some potential risks that could arise during a healthcare renovation project? >
- How can a project manager mitigate the risk of construction delays? >
- What are some potential consequences of budget overruns in a healthcare renovation project? >

Using the CREATE formula

likelihood of the risks happening, the impact to the project, and provide detailed mitigation plans

As a healthcare project manager, your task is to identify potential risks in the renovation project to transform a designated wing into a functional outpatient clinic. Here are some potential risks related to construction delays, budget overruns, patient safety, hospital operations during construction, and other potential major risks:

Risk	Likelihood	Impact	Mitigation Plan
Delays in obtaining necessary permits and approvals	High	High	Ensure all necessary permits and approvals are obtained well in advance of construction start date.
Unforeseen site conditions	Medium	High	Conduct a thorough site assessment prior to construction start date to identify any potential issues.
Inadequate contractor performance	Medium	High	Conduct a thorough vetting process for contractors and establish clear performance expectations in the contract.
Changes in project scope	Medium	High	Establish a clear change management process and ensure all changes are approved by relevant stakeholders.
Budget overruns	High	High	Establish a clear budget and contingency plan, and closely monitor expenses throughout the project.
Patient safety incidents during construction	Medium	High	Establish clear safety protocols and procedures for patients and staff during construction.
Disruption to hospital operations	High	High	Develop a detailed construction schedule that minimizes disruption to hospital operations, and communicate any necessary changes to hospital staff in advance.
Inadequate compliance with healthcare regulations and safety standards	High	High	Ensure all contractors and staff are trained on relevant regulations and standards, and conduct regular audits to ensure compliance.
Inadequate communication with stakeholders	Medium	High	Establish clear

Examples

1 Prompts using RTF

R **Role:**
You're an experienced project manager.

T **Task:**
Provide a concise status update on the current progress of the XYZ project, including key milestones achieved, current tasks in progress, any blockers, and upcoming deadlines.

F **Format:**
Deliver the update in bullet points with each point starting with the relevant aspect (Milestones, In Progress, Blockers, Deadlines).

R **Role:**
You are a seasoned project coordinator.

T **Task:**
Develop a communication plan for the DEF project, outlining the communication goals, target audience, key messages, communication methods, and frequency of updates.

F **Format:**
Present the plan in a structured format with headings for Communication Goals, Target Audience, Key Messages, Communication Methods, and Frequency of Updates.

R **Role:**
You are a skilled resource manager.

T **Task:**
Create a resource allocation plan for the GHI project, specifying team members, their roles, assigned tasks, and allocation percentage. Include any potential resource constraints and plans to address them.

F **Format:**
Deliver the plan in a table format with columns for Team Member, Role, Assigned Tasks, Allocation Percentage, Potential Constraints, and Mitigation Plan.

2 Prompt using CREATE

C

Character:

You're a healthcare project manager with experience in facility renovations and construction management.

R

Request:

Identify potential risks in the renovation project to transform a designated wing into a functional outpatient clinic.

E

Examples:

- Identify risks related to construction delays
- Identify risks associated with budget overruns
- Identify risks impacting patient safety and hospital operations during construction
- Identify any other potential major risks
- Review the attached documentation from a past project and use the same format

A

Adjustments and constraints:

Ensure compliance with healthcare regulations and safety standards. Consider the impact on existing hospital operations and patient care.

T

Types of output:

Risk assessment report, risk mitigation plans, and a risk register

E

Evaluation and steps:

- Timeliness: Ensure the risk assessment is completed at the project planning stage
- Quality: Ensure all significant risks are identified and evaluated for impact and probability
- Stakeholder satisfaction: Confirm the risk mitigation plans are acceptable to hospital administration and staff

3 RTF versus CREATE

R

Role:

You're a seasoned project manager with experience in software development.

T

Task:

Generate a project timeline for an upcoming software development project.

F

Format:

Deliver the timeline in chronological order with key milestones marked.

C

Character:

You're a seasoned project manager with experience in software development.

R

Request:

Generate a comprehensive project timeline for an upcoming software development project, including key phases, deliverables, and deadlines.

E

Examples:

The project involves three main phases: planning, development, and testing. Key milestones include project kickoff, completion of wireframes, alpha release, and final product delivery.

A

Adjustments and constraints:

Ensure that the timeline accounts for a two-week buffer for unexpected delays.

T

Types of output:

Provide the timeline in Gantt-chart format, clearly indicating the duration of each phase and milestone.

E

Evaluation and steps:

Evaluate the timeline based on its alignment with project objectives, feasibility, and potential risks. Break down the task into steps such as gathering project requirements, drafting the timeline, and reviewing for accuracy.

More Prompt Formulas

Prompt Formula	Advantages	Formula Components
RTF	Facilitates clear assignment of project roles and tasks, enhancing team clarity	<p>Role: Specify the role of the project manager or AI clearly.</p> <p>Task: Detail the specific task or objective that needs to be accomplished.</p> <p>Format: Specify the desired format or presentation style for the output.</p>
CREATE	Guides comprehensive prompt creation, ensuring all essential aspects are addressed	<p>Character: Clearly define the role of the project manager or AI in the prompt.</p> <p>Request: Specify the task or objective that needs to be fulfilled by the AI.</p> <p>Examples: Provide relevant examples or references to guide the AI in completing the task.</p> <p>Adjustments and constraints: Outline any adjustments or additional requirements considering constraints.</p> <p>Types of output: Specify the format or type of output expected from the AI.</p> <p>Evaluation and steps: Define criteria for success and break down the task into actionable steps for the AI.</p>
SMART	Ensures project objectives are specific and measurable, guiding project success	<p>Specific: Clearly state the specific objective or goal for the AI to achieve.</p> <p>Measurable: Define how the AI's progress or output will be measured.</p> <p>Achievable: Ensure the task assigned to the AI is realistic and feasible.</p> <p>Relevant: Align the AI's task with the project's overall goals and objectives.</p> <p>Time-bound: Set a deadline or timeline for the AI to complete the task.</p>

More Prompt Formulas (continued)

Prompt Formula	Advantages	Formula Components
STAR	Structures behavioral interview questions, aiding in candidate evaluation	<p>Situation: Describe the context or scenario the AI should consider.</p> <p>Task: Specify the task or role the AI needs to fulfill within the given situation.</p> <p>Action: Detail the specific actions the AI should take.</p> <p>Result: Describe the expected outcomes or results of the AI's actions.</p>
ABCD	Analyzes project-related behaviors and decisions, aiding in problem-solving	<p>Antecedent: Describe the event or circumstance preceding the prompt for the AI's understanding.</p> <p>Behavior: Specify the actions or behavior the AI should exhibit in response.</p> <p>Consequences: Explain the potential consequences or outcomes of the AI's behavior.</p> <p>Decision: Describe the decision-making process the AI should follow.</p>
PEAR	Facilitates structured reflection, aiding in project evaluation and improvement	<p>Problem: Identify the problem or challenge the AI needs to address.</p> <p>Experience: Describe relevant experiences or knowledge the AI can draw upon to tackle the problem.</p> <p>Action: Specify the actions the AI should take to resolve the problem.</p> <p>Result: Describe the expected outcomes or results of the AI's actions.</p>
SCARF	Addresses team dynamics and motivation, fostering better collaboration	<p>Status: Provide an assessment of relevant factors such as team dynamics or project status.</p> <p>Challenges: Identify challenges or obstacles the AI may encounter.</p> <p>Actions: Specify actions or strategies for the AI to overcome challenges or improve the situation.</p> <p>Results: Anticipate the expected results or outcomes of the AI's actions.</p> <p>Feelings: Consider the emotional impact or response relevant to the task assigned to the AI.</p>

Checklist: Effective Prompt Characteristics

This checklist outlines key characteristics essential for crafting effective prompts, ensuring clarity, relevance, and reliability in AI responses.

✔ **Specificity**

Is the prompt specific and clear in its instructions?

✔ **Context**

Does the prompt provide enough relevant information for the AI to understand the task at hand without overwhelming it with unnecessary details?

✔ **Role**

Does the prompt provide a role or character that will help the AI system identify the most relevant data from its training to apply to your task?

✔ **Tone**

Is the tone of the prompt appropriate for the desired output, whether it's professional, casual, friendly, and so on?

✔ **Examples**

Are examples included to help the AI better understand the prompt and align its responses with expectations?

✔ **Experimentation and Refinement**

Have you experimented with different prompts and refined them based on the AI's responses and evolving goals?

✔ **Audience Tailoring**

Is the prompt tailored to the audience's understanding and needs, including your own understanding if you're the audience?

✔ **Clarity**

Is the prompt free from jargon, acronyms, and ambiguous language to prevent misunderstandings?

✔ **Structure**

Is the tone of the prompt appropriate for the desired output, whether it's professional, casual, friendly, and so on?

✔ **Reliability Check**

Have you incorporated a reliability check by asking for references or sources to ensure the generated content meets accuracy and reliability standards?

Checklist: Ethics and Compliance

Use this checklist as a guideline for maintaining ethical, secure, and compliant practices while optimizing the accuracy and quality of outputs.

✓ Validation check

Ensure prompts include a validation check to mitigate “LLM hallucination,” where the LLM generates factually incorrect information. Request citations and spot-checking against known facts.

✓ Augment data

Augment LLM data with reliable sources to address noncurrent or incomplete training data, ensuring comprehensive and accurate outputs.

✓ Confidentiality

Handle confidential, secure, and protected data with care, avoiding sharing such information with LLMs, especially those hosted by external companies or vendors.

✓ Ethical use

Adhere to ethical guidelines when using LLMs, avoiding the temptation to push boundaries that may violate trustworthy or ethical AI standards.

✓ Validation strategies

- Establish a verification system to compare outputs with trustworthy sources or have field experts assess them.
- Deploy automated systems to match responses with authoritative databases.
- Conduct controlled experiments using synthetic or anonymized data to evaluate LLM performance across various scenarios.
- Promote regular feedback among teams to maintain and enhance output accuracy and quality.

Checklist: Ethics and Compliance (continued)

✔ **Compliance check**

Ensure that LLM usage complies with relevant laws, regulations, and organizational policies regarding data privacy, security, and ethical AI.

✔ **Security measures**

Implement robust security measures to safeguard LLM usage, including encryption of sensitive data, access controls, and regular security audits.

✔ **Transparency**

Foster transparency in LLM usage by documenting processes, algorithms, and decision-making criteria to ensure accountability and trustworthiness.

✔ **Bias mitigation**

Implement measures to mitigate biases in LLM outputs, such as diverse training data, bias detection algorithms, and regular bias assessments.

✔ **Continuous monitoring**

Establish mechanisms for continuous monitoring and evaluation of LLM performance, ethics, and security, adapting practices as needed to address emerging challenges or issues.

Discussion Question

Join the conversation on our communities page at ProjectManagement.com as we delve into the ongoing debate between commoditization and differentiation in project management. Discover insights from others and share your perspective on whether the widespread adoption of prompt engineering diminishes the value of project management skills or presents an opportunity for project managers to distinguish themselves and command higher value.

Q: Will the widespread adoption of prompt engineering commoditize project management skills, or can it help PMs differentiate themselves and command higher value?

>> GO TO CONVERSATION

Click this link to visit the discussion on projectmanagent.com

Home > Discussions > Project Management Central > Will the widespread adoption of prompt engineering commoditize project management skills, or can it help PMs differentiate themselves and command higher value?

Project Management Central



Raman Chadha
Manager | Deloitte
Millbrae, USA

+ Connect

I think any technology that can automate parts of the project management chain can commoditize project management skills once it becomes commonplace. GenAI could be the most powerful such technology that we have seen yet, at least in the recent past. That said, there will always be room to use it as an enabler for managing more complex tasks, e.g., tasks that involve more human to human interaction. We are only scratching the surface of how it can be used and for the foreseeable future, I think it can help differentiate Project Managers if they are open to embracing it and experimenting with it. More than prompt engineering, it will be about being creative in identifying new use cases that GenAI could solve.

Posted: May 25, 2024 7:54 PM



Report

Reply



Omar Jabbar
Project Management and Technol...
Ontario, Canada

+ Connect

This trend raises important questions about the future of project management in a rapidly evolving technological landscape. Many people have wondered whether AI will replace project managers. It's clear that PMs need to adapt and learn how to use and leverage AI to stay relevant and effective in their roles. Who would have imagined 20 years ago that vehicles would not need drivers? We may not be there yet, but we will be soon.

Posted: May 27, 2024 10:31 AM



Report

Reply



Hakam Madi
Independent Consultant
Amman, Jo, Jordan

✓ Connected

The concern is valid. However, despite my immersion in AI, I believe we are still far away from a point where AI can fully replace human PMs. The vast complexities of project management require not only the human touch but also human reasoning, which will remain indispensable (unless we become AI-dependent homo sapiens, where we require AI to reason for us!).

AI, in its current stage, struggles to fully comprehend and contextualise the vast complexity of project management with all its nuances (organisational experience, PM experience, situation analysis, stakeholder analysis, etc.). Surely, there are arenas where AI would excel. Or perhaps the key lies in how we excel at



2

REFINING PROMPTS

Summary

Undesirable Responses

When interacting with LLMs, encountering undesirable responses is common. These may stem from vague or unstructured prompts, outdated model knowledge, reliance on AI assumptions, conflicting requests, or prompt overloading. To improve responses, provide specific and structured prompts, ensure relevant model knowledge, avoid assumptions, resolve conflicts, and avoid overloading prompts. Refining prompts iteratively and implementing a **refusal breaker pattern**, which asks the LLM to explain or reword a prompt when it refuses to produce an answer, can also enhance AI interactions. Use our table [on page 33](#) to see a list of common prompt pitfalls and suggestions on how to fix them.

Advanced Prompting Patterns

Prompting patterns are techniques that can be mixed and matched to fine-tune prompts, similar to ingredients in a recipe. Some common examples include chain-of-thought, tree-of-thought, and flipped interaction. Experimenting with these patterns can help adapt and optimize inputs based on how the AI responds. For more patterns with their suggested uses and examples, refer to our advanced prompt pattern table.

Advanced Prompting Patterns



Chain-of-thought (CoT)

Ideal for tackling complex problems by breaking them down into manageable subtasks, clarifying the thought process for both the AI and project stakeholders.

Break down a project management plan into phases: initiation, planning, execution, monitoring, and closure.



Chain of feedback

Useful in project management for continuous alignment with project objectives, integrating iterative feedback within each step.

In a software development project, evaluate each iteration's performance based on feedback from stakeholders and adjust the development plan accordingly.



Tree-of-thought

Suitable for exploring multiple pathways of thought or solutions simultaneously, facilitating thorough exploration of complex scenarios, similar to creating a decision tree.

When developing a Project Risk Management plan, consider various risk-response strategies concurrently for comprehensive risk mitigation.



Persona (example below)

Valuable for steering the AI's responses to fit a particular style or expertise, generating solutions or ideas that align with specific project needs or stakeholder expectations.

Customize project status reports for different stakeholder groups such as executives, team members, and clients to ensure relevance and effectiveness.



Flipped interaction (example below)

Effective for gathering detailed project requirements and specifications from stakeholders and ensuring project alignment, especially when the steps aren't fully understood.

In project kickoff meetings, prompt stakeholders to provide specific project requirements and expectations to guide project planning and execution.








Question refinement

Helpful for refining project-related inquiries to elicit more accurate and useful responses from the AI.

Refine project risk assessment questions to ensure comprehensive coverage of potential risks and improve risk management effectiveness.

Advanced Prompting Patterns (continued)

	Pattern	When to Use	Practical Application Examples
	Self-consistency	Utilized to ensure consistency in project-related logic and outputs across different project stages or instances.	Validate project scheduling assumptions by asking the AI to confirm task durations and dependencies, ensuring project timeline consistency.
	ReAct	Engage AI in exploring hypothetical project scenarios to anticipate and prepare for potential project challenges.	Simulate different project delivery scenarios (e.g., early delivery, delayed delivery) and seek AI insights on potential risks and mitigation strategies for each scenario.
	Scenario exploration	Engage AI in exploring hypothetical project scenarios to anticipate and prepare for potential project challenges.	Simulate different project delivery scenarios (e.g., early delivery, delayed delivery) and seek AI insights on potential risks and mitigation strategies for each scenario.
	Risk assessment matrix	Helps project teams identify, assess, and prioritize project risks, enabling proactive risk-management efforts.	Assess project risks using a probability-impact matrix and seek AI recommendations for prioritizing risk-response actions to minimize project risks.
	Cognitive verifier	Ensures project-related logic and outputs align with established guidelines, standards, or best practices, enhancing project quality and compliance.	Validate project documentation against industry standards and seek AI feedback on areas needing improvement to ensure project deliverables meet quality expectations.

Examples

1 Flipped Interaction

The flipped-interaction pattern **reverses usual roles** to help a user get the response they're seeking when they might not know what to prompt the LLM. Instead of responding to a question or performing a task, the **LLM is prompted to proactively question the user to draw out more detailed information**. The system does this until it's confident enough to provide a relevant result that's customized to the user's specific context and needs.

This pattern is best when you don't know all the steps needed for a task/project and is most effective for gathering detailed project requirements and specifications from stakeholders, ensuring project alignment.

You are a project manager creating a project management plan for Project Triton, a fitness tracking mobile app development project. You and I will work together to create a project management plan that includes:

- A work breakdown structure (WBS) that outlines the key deliverables and tasks for each project phase
- A timeline with specific milestones and dependencies, considering the 8-month project duration and the beta release in Month 6
- A resource allocation plan that identifies the roles and responsibilities of each team member, including the software development team, UI/UX design team, data analytics team, and external stakeholders
- A risk management plan that addresses the potential risks identified in the project background, as well as any additional risks that may arise during the project
- A stakeholder communications management plan that outlines the frequency and methods of communication with key stakeholders, including focus groups, fitness experts, and nutritionists

I have collected and attached the deliverables document (deliverables.pdf), a team charter (teamCharter.doc), the current identified risks (risks.pdf), and the stakeholder register (stakeholders.pdf)

Walk me through how to create the project plan in a well-structured format, using bullet points and tables where appropriate. I would like you to ask me questions to create a suitable project plan draft, which I will adjust and change according to the project nuances. You should ask questions until this condition is met or to achieve this goal. Ask me questions about the project plan until you have enough information to generate a suitable result from which to generate a draft.

We also need to include any assumptions or dependencies that may impact the project's success. The plan should be comprehensive yet concise, enabling the project team to understand their roles and responsibilities clearly and execute the project effectively.

Let's start with creating the WBS together.

2 Persona Pattern

Generative AI systems are trained on vast amounts of data, and you don't necessarily want responses that pull from all of that information. If you're looking for content tailored to project management, for example, content geared toward elementary school students wouldn't be sufficient. That's why you'll use the persona prompt pattern.

By **guiding the generative AI system to assume a particular role or character**, you're telling the LLM to focus the data it's using to understand your prompt and generate outputs that most closely match the sort of outputs that particular role or character would produce. The more specific guidance you provide to the persona, the more detailed and relevant your output will be.

Act as a project manager for Project Insight. You have 25+ years of specialization in data-driven decision-making. You are tasked with leading data-driven marketing optimization efforts for a product called FoodNova, a fast-growing, mobile-based food delivery app. The objectives for this project are:

- Develop a data analysis framework that can process and analyze diverse datasets from various sources, ensuring data quality and compliance with privacy regulations
- Streamline the efforts of a cross-functional team to extract valuable insights from customer data, identifying key segments, preferences, and behavior patterns
- Evaluate the performance of past marketing campaigns and provide data-driven recommendations to optimize future campaigns across different channels and platforms
- Manage stakeholder expectations and communication, ensuring that insights and recommendations are actionable and aligned with FoodNova's business objectives
- Foster a culture of continuous improvement and innovation within the project team while focusing on delivering measurable results and business value

You will create a data analysis framework that allows team members to process and analyze diverse datasets from various sources, ensuring data quality and compliance with privacy regulations. First, create and present an outline or blueprint of the plan. You will be presenting this to a nontechnical audience of directors, who will have to approve the plan before you and your team move forward.

The directors are primarily concerned with the strategic alignment and business impact of the project. Refer to these strategic objectives for the project to tailor your presentation.

3 Iterative Prompt Refinement

Iterative prompt refinement allows you to **interact with your LLM and adapt your input in response to the AI's output**. This technique comes in handy when you'd like your **prompt results to build off of previous responses** in the conversation. You can respond iteratively, where each response informs the next question. Refine and modify the responses to address any issues with the previous response. You also can adjust the prompt wording, provide additional context, or add instructions and further details as needed to work your way to desired results. You can use iterative prompting for question-and-answering, content generation, data analysis, or language translation.

Sample prompt #1:

I am a project manager at a mid-sized tech company. Identify 10 potential risks of introducing a new software tool. Focus on a general software implementation scenario. We expect a brief initial list of generic risks.

The Generative AI system will provide a high-level response lacking specifics tied to the company's unique constraints and budget-specific risks.

Sample prompt #2:

Let's expand on these risks. See attached challenges with the 2019 software upgrade. The risks should include potential disruptions in our existing workflows and budget overruns. Please provide a detailed report with bullet points. Assess whether each risk is detailed and directly applicable to our scenario.

The next response from the generative AI system will build on the previous response to include specifics about financial risks and references the example of the 2019 upgrade.

Sample prompt #3:

Now, focus specifically on operational risks and mitigation strategies and refer to ongoing projects that might be affected. List mitigation strategies and provide actionable strategies for highlighted risks in a prioritized list. Ensure that mitigation strategies are realistic and tailored to our operational context.

This response is closer to providing the precise, actionable insights that can directly influence project planning and risk management strategies.

Checklist: How to Improve AI Responses

- ✓ **Provide more detail**
Provide specific and clear instructions to the LLM

- ✓ **Use more structure**
Use a structured prompt formula like RTF or CREATE, or select a different one that fits your situation

- ✓ **Provide additional context and eliminate irrelevant or inconsistent information**
Provide sufficient context, avoid referencing irrelevant data, or consider using alternate LLMs

- ✓ **Ask for more specific responses**
Ensure the prompt includes all necessary information, and avoid asking AI to draw conclusions broadly

- ✓ **Eliminate too many or conflicting requests**
Review the prompt for conflicting instructions and remove or clarify them to prevent misinterpretation.

- ✓ **Use multiple steps**
Refine the prompt iteratively, providing additional context and clarifying the desired outcome

- ✓ **Avoid rejected responses**
Include a refusal breaker pattern in the prompt to ask the AI to explain why it can't answer and suggest alternatives

Discussion Question

We invite you to share your insights on the best practices for ensuring accuracy, relevance, and alignment with original goals. Join the conversation on our communities page at [ProjectManagement.com](https://www.projectmanagement.com) and contribute your expertise to this crucial discussion.

Q: When using AI systems, what are some best practices for ensuring the results you receive are accurate, relevant, and aligned with your original goals?

>> GO TO DISCUSSION

Click this link to visit the discussion on [projectmanagent.com](https://www.projectmanagement.com)

Home > Discussions > Project Management Central > Will the widespread adoption of prompt engineering commoditize project management skills, or can it help PMs differentiate themselves and command higher value?

Project Management Central



Hakam Madi
Independent Consultant
Amman, Jo, Jordan
✓ Connected

This could be done by fine-tuning the chat context to fine-tuning the model using several strategies, such as Examples or few or many shots. I'm currently working on a project. In my system Instruction [which Could be the scoping prompt if you are not accessing the API], I have the request and the verification method and criteria, so at the end of each output, I receive the confidence level achieved by AI.

With some training, I developed it further to output only results with an 85% confidence level or else provide an explanation or ask for clarification. This, btw, surprisingly jammed all the previous hallucinations.

Posted: Jun 11, 2024 2:01 AM

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Reply



Omar Jabbar
Project Management and Technol...
Ontario, Canada

+ Connect

I don't disagree with the answers above, but I keep it very simple. Make sure your data is clean, ask specific questions, and review the outcome. All of this will depend on the AI tools you are using and your needs for using them. Once you have this figured out, you will be good to go.

Continuing review and improvement are essential in this case. I hope that helps.

Regards,

Posted: Jun 11, 2024 11:22 AM

Vote

Report

Reply



Mashhood Ahmed
Project Manager - PMO| PMAssist...
Edmonton, Canada

+ Connect

have a well structured prompt, understand Project injection, drifting, leaking and AI Hallucination. Here are some common elements of well structure prompt.

- Instruction - a specific task or instruction you want the model to perform
- Context - external information, Persona or additional context that can steer the model to better responses
- Input Data - the input or question that we are interested to find a response for
- Output Indicator - the type or format of the output
- Response Tone - Tone of the response



3

CHAINING PROMPTS

Summary

How to Prompt Chain

The concept of **prompt chaining** involves breaking down complex tasks into smaller subtasks, allowing for more efficient management of requests made to language models like LLMs. By structuring prompts to focus on one or two tasks at a time, you can enhance the AI's comprehension and output quality. For instance, a prompt initially requesting several tasks may result in incomplete or unsatisfactory responses. Refining the prompt using the CREATE formula, which involves specifying tasks step by step, can improve results

Sustaining the Iterative Process

When refining prompts, it's essential to document each prompt for future reference and improvement. A **prompt refinement template** can streamline this process, aiding in the identification of effective strategies and facilitating knowledge sharing among team members. This template typically includes sections for detailing the task, patterns used, LLM model and version, prompt techniques (such as prompt chaining), and metrics for evaluating output quality. Regular review and updating of this documentation are necessary to adapt to changes in LLM performance and to identify trends and best practices. Feel free to use and share ours [on pages 48 and 49](#) of this workbook.

Examples

1 Complex Task Breakdown

If you have a complex prompt with multiple parts or asks, it's best to use prompt chaining, breaking large, detailed tasks into subtasks. You can then ask the LLM to complete one or a few tasks at a time through subsequent prompts to maximize the AI's output quality.

You are the project manager for our digital learning product team.

I need your help with organizing and optimizing our project team's structure and responsibilities. Here are the tasks I need your assistance with:

- Analyze the job descriptions and task assignments below.
- Summarize the key responsibilities for each team member.
- Create a RACI chart based on the job descriptions and task assignments.
- Identify any overlaps or gaps in responsibilities.
- Provide a detailed explanation of how you constructed the RACI chart and any recommendations for optimizing team roles and improving efficiency.

Job Description Input:

Team Member	Job Title	Tasks
Alice Jones	Project Manager	Manage projects, ...
Bob Brown	Developer	Write code, ...

Summarized Responsibilities Output:

Team Member	Job Title	Key Responsibilities
Alice Jones	Project Manager	Manage, coordinate, ...
Bob Brown	Developer	Write code, debug, ...

Feel free to use any additional context or details you find in the job descriptions and task assignments to enhance your analysis and outputs.

- Analysis of job descriptions and task assignments
- Summaries of key responsibilities
- RACI chart
- Identification of overlaps and gaps
- Explanation and recommendations

Review the outputs for completeness, accuracy, and clarity. The recommendations should be actionable and aimed at optimizing team roles and improving efficiency.

Complex Task Breakdown (continued)

Chained prompt #1: makes one ask to align team members with job duties

Analyze the job descriptions and task assignments from the provided spreadsheets, and align each team member with their respective job duties.

Files Provided:

Job_Descriptions.xlsx

Task_Assignments.xlsx

Chained prompt #2: summarize key responsibilities

Using the aligned team members and their job duties from the previous task, summarize the key responsibilities for each team member.

Chained prompt #3: create RACI chart

With the summarized responsibilities, create a RACI chart to delineate who is Responsible, Accountable, Consulted, and Informed for each task.

Chained prompt #4: identify overlaps and gaps

Analyze the RACI chart and the summarized responsibilities to identify any overlaps or gaps in responsibilities among team members

2 Brainstorming Assistance

You can use generative AI to help you gather ideas from sources you might not have previously considered, or expand the range of topics you're considering as part of a brainstorming exercise. However, effective brainstorming is an iterative task best suited for back-and-forth interaction, not just a single prompt.

You are a project manager at a mid-sized tech company.

Help us brainstorm and give us ideas for selecting a new project management tool.

We currently use a tool that doesn't integrate well with other software and lacks agile support. We need something with good reporting features and user-friendly interfaces.

Focus on tools that are within a reasonable budget and offer both cloud-based and on-premise options.

Provide a list of potential tools and their features.

Success is determined by identifying several potential project management tools that meet our initial criteria.

This prompt is ineffective because it's too general and lacks enough detail for a tailored response. Additionally, it misses the mark with true brainstorming and just asks for a general list.

Brainstorming Assistance (continued)

Chained prompt #1

You are a consultant specializing in project management tools.

We want to have a conversation with you to help us select a new project management tool. Please ask us questions to understand our needs better and arrive at a solution.

AI Response

Could you describe the main functionalities and integrations you currently use and need in a project management tool? Are there any specific pain points or limitations with your current tool that you'd like to address?

Chained prompt #2

Our current tool doesn't integrate well with our CRM and doesn't support agile approaches. We need something that offers robust task tracking, easy-to-generate reports, and integrates with tools like Slack, Google Workspace, and our CRM.

AI Response

Got it. Do you have a preference for a cloud-based or on-premise solution? Also, what is your budget range for this new tool?

Chained prompt #3

We prefer a cloud-based solution for its accessibility and ease of updates. Our budget is around \$10,000 annually.

AI Response

Thanks for the details. Can you tell me about the size of your team and their technical proficiency? Are they familiar with agile practices, or would they need some training?

Brainstorming Assistance (continued)

Chained prompt #4

We have a team of about 50 people. Most are familiar with agile practices, but some might need a bit of training. Technical proficiency varies, so the tool should be user-friendly.

AI Response

That's helpful. Among the features you mentioned, which ones are absolute must-haves, and which ones are nice to have but not critical?

Chained prompt #5

Must-haves include integration with our CRM and Slack, agile support, and good reporting features. Nice-to-haves are time tracking and Gantt charts.

AI Response

Based on your requirements, here are a few options: Asana, Trello, and Monday.com. Do any of these stand out to you, or are there other tools you've heard of that you'd like me to include in the comparison?

Chained prompt #6

Those all sound good. Please also include Jira in the comparison.

Brainstorming Assistance (continued)

AI Response

Certainly. Here's a comparison table of Jira, Asana, Trello, and Monday.com based on your criteria:

Feature	Jira	Asana	Trello	Monday.com
Integration	Excellent	Good	Fair	Excellent
Agile Support	Excellent	Good	Fair	Good
Reporting	Excellent	Good	Fair	Good
User-Friendly	Moderate	Excellent	Excellent	Good
Budget	Within budget	Within budget	Within budget	Within budget
Time Tracking	Yes	No	No	Yes
Gantt Charts	Yes	Yes	No	Yes

Please review this table and let me know your thoughts. Are there any features or factors that need further exploration?

Chained prompt #7

This table is very helpful. We are leaning towards Jira and Monday.com. Could you provide a more detailed comparison of these two, focusing on user experience and customer support?

Brainstorming Assistance (continued)

AI Response

Certainly. Here's a more detailed comparison of Jira and Monday.com regarding user experience and customer support:

Aspect	Jira	Monday.com
User Experience	Moderate learning curve, very powerful once mastered	Intuitive and user-friendly from the start
Customer Support	24/7 support, extensive documentation, community forums	Excellent support with dedicated account managers, extensive tutorials

Based on this detailed comparison, which tool aligns better with your team's needs and preferences?

Chained prompt #8

Monday.com seems to align better with our team's need for an intuitive user interface and excellent support. We'll proceed with a trial of Monday.com.

3 Agile Feedback Loops

You can use generative AI to enhance agile feedback loops by iteratively refining ideas and solutions based on continuous input from users and stakeholders. This process benefits from the structured and interactive nature of prompt chaining, which allows for detailed exploration and improvement of features or processes. However, effective agile feedback requires a series of iterative prompts, not just a single request, to fully capture evolving requirements and drive continuous improvement.

You are a project manager overseeing the development of a mobile-banking application.

Please develop a new feature for the banking app that allows users to set up recurring bill payments. Requirements will evolve continually in response to stakeholder and user feedback.

Describe how a user would set up a recurring bill payment, including frequency options and payment methods.

Ensure the prompt includes all necessary information, and avoid asking AI to draw conclusions broadly.

Please include text descriptions, user interface mockups, and flow diagrams.

Chained prompt #1

Review the updated documentation and sentiment from the executive team regarding the new recurring bill payment feature. Compare it to the current features to ensure alignment with the app's scope.

The executive team wants to emphasize the simplicity of the bill payment setup process, ensuring it's intuitive for users across different age groups and tech-savviness levels.

Agile Feedback Loops (continued)

Chained prompt #2

Incorporate feedback from the UI/UX team and conduct a usability analysis of the recurring bill payment feature.

The UI/UX team suggests adding tool tips for first-time users to guide them through the setup process smoothly.

Chained prompt #3

Next, optimize the backend infrastructure to handle recurring transactions securely and efficiently for the new bill payment feature.

The development team advises implementing a scheduling algorithm to ensure timely and accurate bill payments without overloading the server.

Chained prompt #4

Review the updated documentation and sentiment from the executive team regarding the new recurring bill payment feature. Compare it to the current features to ensure alignment with the app's scope.

The marketing department emphasizes highlighting the convenience and peace of mind users will experience by automating their bill payments through the app.

Chained prompt #5

Conduct A/B testing on the recurring bill payment feature to gather user feedback and optimize its performance.

The QA team suggests testing different variations of the user interface and payment scheduling options to determine the most preferred setup among users.

Documentation Spreadsheet

Create a documentation spreadsheet that tracks the prompts you're using to address specific tasks. The spreadsheet should be easy to find, accessible to all, editable, and iterated on often. The spreadsheet is only beneficial if it's updated, so feel free to iterate and update this daily.

Depending on the needs of your organization and the use cases for prompts, you may have specific needs around documentation. Each spreadsheet may look different. However, if you're looking to get started setting one up, some of the columns you may want to include in your documentation spreadsheet include:

Task	What's the specific task the prompt addresses?
Prompt	Provide the specific prompt used for the task.
Formula	Describe any specific formula used (such as CREATE or RTF).
Pattern or Prompt Chaining	Detail any prompt patterns used (chain-of-thought, feedback loops, and so on).
LLM (including version)	Note the model and its version used for generating responses, as performance can vary with updates.
Response	Provide an example of the response generated by the LLM for the given prompt.
Results Metrics	
a. Accuracy	Rate the output from 1 (poor) to 5 (best).
b. Relevance	On a scale of 1–5, assess if there's too little output, too much, or if the amount is just right in terms of relevance.
c. Conciseness	Evaluate the output's length as too short, too long, or just right (scale of 1–5).
d. Follow-Up Needs	Indicate if additional prompts were needed to refine or expand upon the initial response.
e. Refusals and Incompletions	Record any instances of refusals or incomplete responses encountered.
Notes	Document any interesting findings, quirks, or tips related to the prompt or the LLM's response.



PROMPT v1: You are an experienced project manager. Draft a project update report for stakeholders covering project status, key achievements, challenges and risks, and next steps. Provide the report in a structured format with the following sections: (1) Executive Summary (2) Progress Overview (3) Challenges and Risks (4) Next Steps (5) Conclusion

TASK	FORMULAS / PATTERNS	LLM & VERSION	ACCURACY	RELEVANCE	CONCISENESS	FOLLOW-UPS	REFUSALS	INCOMPLETE	NOTES
Project Update Report	RTF	Infinity	5	4	4	1	0	1	Often times out
		ChatGPT 4.0	5	5	4	2	0	1	Performs best with tipping
		Claude 3	4	4	3	2	1	1	Performance varies widely on timing
		CoPilot 4-turbo	4	3	3	2	1	2	Servers get overloaded
		Gemini 1.5	4	4	5	3	1	1	Often gets stuck

PROMPT v2: You are an experienced project manager with extensive experience in software development projects. Create a detailed project update report for stakeholders. The report should include the current project status, significant achievements, any challenges and risks encountered, and planned next steps. Please provide a structured report with the following sections (1) Executive Summary - brief overview of current project status and key highlights (2) Progress Overview - summarize milestones reached and tasks completed since last update (3) Challenges and Risks - detail any issues faced, potential impact, and mitigation strategies (4) Next Steps - outline upcoming tasks and milestones (5) Conclusion - summary of overall project health and final remarks.

TASK	FORMULAS / PATTERNS	LLM & VERSION	ACCURACY	RELEVANCE	CONCISENESS	FOLLOW-UPS	REFUSALS	INCOMPLETE	NOTES
Project Update Report	RTF	Infinity	4	4	3	2	1	2	Servers get overloaded
		ChatGPT 4.0	3	5	4	2	0	1	Performs best with tipping
		Claude 3	4	5	4	1	0	2	Best with negative feedback
		CoPilot 4-turbo	5	4	3	1	1	1	Not focused
		Gemini 1.5	4	4	5	2	0	1	More detailed yielded better results

AI Today Podcast

Want to learn more about the documentation technique? [Listen to Cognilytica's AI Today podcast, "Prompt Engineering Best Practices,"](#) which goes over an essential prompt engineering best practice—diligent documentation. Hosts Kathleen Walch and Ron Schmelzer emphasize why keeping meticulous logs of the prompts you try, the language models used, techniques like prompt chaining, and performance results over time are crucial. Discovering which prompts work best is an iterative process of constant experimentation and refinement. Tune in for tips on systematically documenting your way to more accurate and capable AI outputs through this collaborative method.



Discussion Question

With Generative AI, iteratively refining and optimizing prompts can lead to better AI-generated results. This may involve adjusting the specificity or clarity of the prompt to increase relevance and accuracy of results.

Q: What examples do you have of how improving a prompt drastically changed the output quality? What specific changes did you make that led to the improvement?

>> GO TO DISCUSSION

Click this link to visit the discussion on [projectmanagent.com](https://www.pmi.org/shop/p/-/elearning/talking-to-ai-prompt-engineering-for-project-managers/e1128)

Home > Discussions > Project Management Central > In your experience with GenAI, how has refining a prompt drastically changed the output quality?

Project Management Central



Caryn McCleskey
Altamonte Springs, FL, USA

+ Connect

I find that talking to our company AI as an assistant (as I heard from a PMI webinar) is helpful and treating my sessions as co-writing sessions as I would with a coworker in the past. Getting a good tone is a challenge and I often have to ask it to rewrite something 'less formally but still professional,' otherwise it goes from overly formal to overly casual. I use it most as an enhanced thesaurus, asking it for various ways to say different phrases, or asking it to change certain words within what it drafts.

Posted: Jun 28, 2024 9:28 AM

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Aaron Porter
IT Project Manager | Blade HQ
Pleasant Grove, UT, USA

+ Connect

I formulated a prompt that was something like a mini-program to help stakeholders generate various types of requirements based on information they input. Refining the prompt made, over several iterations, made the difference between GenAI providing the options to choose from after each response and whether it allowed the stakeholder to choose an option or just spit out responses to all the options at once.

I need to refine it, again, now. What worked on GPT4 does not work exactly the same on GPT4o.

I've also found that, for some topics, asking the same question in different ways can give you a more comprehensive answer when you combine the results.

Posted: Jun 28, 2024 10:23 AM

Vote

Report Reply



Dominic Williams
TELUS
Ontario, Canada

+ Connect

I like to phase my prompts in a series of steps and often map / plan my prompts before engaging with the AI tool. This saves time and less rework in revising one prompt over and over again.

Posted: Jun 29, 2024 8:47 AM

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4

PROMPTING ACUMEN

Summary

The Art of Prompt Engineering

Prompt engineering starts with creativity and intuition. To enhance AI responses, creatively develop prompts and tailor them for specific tasks. This intuition is honed through problem-solving, recognizing patterns, and continuous improvement. Creative problem-solving helps devise solutions using generative AI, while pattern recognition facilitates smoother experimentation. Continuous improvement practices translate into effective prompt building, acknowledging that LLMs respond differently based on their programming and version.

Experimentation is crucial for developing prompt engineering skills. Documenting prompts and their processes enables systematic learning and adaptation. Use our documentation template to document your prompts and share them within the community, fostering collaboration. Recognize and document prompt patterns that yield high-quality outputs, and utilize advanced features of generative AI such as plug-ins and APIs, ensuring data cleanliness and security. Overcoming a fear of mistakes is essential; view each prompt as a learning opportunity. Experiment with different tasks, and draw inspiration from the Use Case library.

Experimenting with various prompt patterns reveals effective approaches across scenarios. This trial-and-error process clarifies LLM limitations and capabilities, promoting efficient prompting strategies. Adopt a growth mindset, viewing LLMs as tools for accelerating work. Seek peer feedback to refine prompts and generate new ideas. Patience and persistence are key, as there's no penalty for failure, only rewards for success.

The Science of Prompt Engineering

You've learned fundamental skills and best practices in prompt engineering to enhance project success. Effective prompting requires clarity, specificity, context, examples, relevant background, and clear output instructions. You've learned the RTF (role, task, format) formula for simple requests and the CREATE (**C**haracter definition, specific **R**equests, **E**xamples, **A**justments, output **T**ypes, and **E**valuation steps) formula for more complex inquiries.

For advanced requests, use prompt-chaining techniques to facilitate detailed, interactive exchanges with the LLM, allowing for iterative outputs and deeper inquiries. Use templates for consistency and automation scripts for repetitive tasks. Enhance prompt quality with error and fact-checking approaches as well as the "explainer" method. Systematically document, analyze, and refine prompts to improve outcomes, share successes, and discover innovative applications.

Track metrics like effectiveness and conciseness in prompt documentation templates. Be clear and specific in prompts, testing both simple and detailed versions to find the optimal level of detail

Ensure ethical AI usage by validating outputs, protecting sensitive data, and adhering to ethical guidelines. Be aware of LLM limitations and potential inaccuracies, always verifying results.

Examples

1 Improving Communication

As a project professional, leveraging generative AI can significantly enhance and augment your soft skills, including critical thinking, communication, collaboration, problem-solving, and more. You can use your critical thinking skills by approaching problems systematically, evaluating responses from LLMs, and questioning assumptions.

Using documentation spreadsheets helps you hone your collaboration skills. Generative AI can also improve communication skills. Project managers excel at conveying information clearly and succinctly, and this skill comes in handy when creating prompts and using the generated results. Project managers are often tasked with generating clear, concise update emails for project stakeholders. Using the soft skills mentioned above, you can use LLMs to create templates for email communication.

In this example, you're using AI to help you better communicate with various stakeholders—as well as keep emails clear, concise, and in a specific format—to make sure you don't miss any critical updates.

Act as an experienced project manager who is skilled at writing clear, concise emails for weekly project updates.

Create an email template that can be used throughout the entire project for a project manager to send out on a weekly basis to update all stakeholders working on the project on what happened that previous week.

Make sure that the email uses simple wording, is not overly verbose, and provides a clear template any project manager can use to send out on a weekly basis.

The best examples of emails can be found on the PMI.org website and any content from the Project Management Institute. Only reference materials and data from PMI, not from other blogs or websites.

2 Assistance With Change Request

Project professionals often rely on their problem-solving skills to tackle unforeseen problems during project execution. Generative AI can provide assistance with change requests, improving your soft skills of problem-solving, communication, and collaboration.

In this example, you're a project professional who is new to managing projects. This is the first project you're managing, and some changes have been requested. You need help understanding the change-request process. Using your soft skills, you turn to LLMs to help you better understand this process.

Act as an experienced project manager.

Explain to a junior project manager what a change request is, why it's needed, and the general steps involved in submitting a change request.

Create a document that can be shared with all junior project managers.

The best examples of project change requests can be found on the PMI.org website and any content from the Project Management Institute. Only reference change management guides and data from PMI, not from other blogs or websites.

Checklist: Art

Use this checklist to master the art and science of prompt engineering, ensuring effective, creative, and responsible use of AI tools.

✓ 1. Develop Intuition

- Cultivate creative problem-solving and pattern recognition skills
 - Continuously practice and improve prompting techniques
-

✓ 2. Expand Your Creative Problem-Solving

- Experiment with innovative ideas and document the process
 - Share prompts within a community for collaborative learning
-

✓ 3. Enhance Pattern Recognition

- Notice and document effective prompt patterns
 - Experiment with these patterns to push boundaries
-

✓ 4. Utilize Advanced Features

- Use plug-ins, file uploads, computer vision, text-to-speech, APIs, and so on
 - Experiment with different tasks to explore LLM capabilities
-

✓ 5. Overcome Fear of Mistakes

- View each prompt as a learning opportunity
 - Understand how to handle prompt rejections and undesired responses
-

✓ 6. Continuous Improvement

- Adopt a trial-and-error mindset and use metrics to assess effectiveness
 - Seek and incorporate feedback from peers
-

Checklist: Science

Use this checklist to master the art and science of prompt engineering, ensuring effective, creative, and responsible use of AI tools.

- ✓ **1. Follow General Good Practices**
 - Ensure clarity, specificity, context, examples, and clear output instructions
 - Ensure data is clean and has consistent, nonconflicting instructions

- ✓ **2. Use Prompt Patterns**
 - Apply the RTF formula for simple requests
 - Utilize the CREATE pattern for complex tasks

- ✓ **3. Employ Prompt Chaining**
 - Use prompt-chaining techniques for detailed, iterative exchanges
 - Utilize the CREATE pattern for complex tasks

- ✓ **4. Advanced Techniques**
 - Use templates for consistency and flipped interactions for unknown details
 - Implement automation scripts and employ error/fact-checking approaches

- ✓ **5. Iterative Refinement**
 - Systematically document and analyze prompt effectiveness
 - Share successful prompts and explore new applications

- ✓ **6. Ensure Ethical and Responsible Use**
 - Validate outputs and protect sensitive data
 - Follow ethical guidelines and verify results

Prompt Engineering Exchange

Do you have a great prompt (or prompt chain) that you've tested and performs well? Share the wealth with your fellow PMs and add it to the Prompt Engineering Exchange. Post your prompts, try others' prompts, comment on them, and upvote the particularly effective ones. Don't forget to remove any personal or proprietary information before you post!

>> GO TO THE PROMPT ENGINEERING EXCHANGE






Click this link to visit the Prompt Engineering Exchange on [projectmanagment.com](https://www.pmi.org/projectmanagment.com)

Home > Artificial Intelligence >

Prompt Engineering Exchange

Prompt engineering is the process of talking with an AI (like ChatGPT and PMI Infinity) to generate the most accurate and relevant responses. Project managers can design, test, and refine these prompts and use creative and precise language to guide AI models to produce our desired output. Do you have a great prompt (or prompt chain) that you've tested and performs well? Share the wealth with your fellow PMs and add it here. Don't forget to remove any personal or proprietary information before you post.

Did you know PMI Infinity has a library of community generated and vetted prompts? If you would like to submit a prompt to our review process, check out the [Infinity Prompt Library](#) to learn more.

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CONCLUSION

Applying Prompt Engineering in Daily Project Management

Applying prompt engineering in daily project management can significantly enhance efficiency and decision-making. By leveraging well-crafted prompts, project managers optimize communication with AI tools to offload routine tasks, generate insightful reports, and predict project risks.

For instance, specific prompts can be designed to analyze project timelines, identify potential bottlenecks, and suggest resource reallocations. This approach ensures that the AI outputs are tailored to the project's unique needs, enabling managers to make data-driven decisions swiftly.

Additionally, prompt engineering can facilitate better team collaboration by generating clear and concise updates, thus keeping all stakeholders informed and aligned with project goals. This strategic use of prompts not only streamlines workflows but also empowers project managers to focus on high-priority tasks that require human judgment and creativity.

Prompt Ideas



Discover topics designed to inspire and enhance your project management process at every stage, from initiation to closure. These topics serve as starting points, sparking ideas on how to leverage generative AI to streamline your tasks and improve efficiency. Feel free to adapt and refine these suggestions using your intuition and the skills you've developed in this class to meet the unique needs of your project.



INITIATION AND PLANNING

- Generating a project charter
- Defining project scope and objectives
- Conducting a feasibility study
- Establishing project governance
- Performing stakeholder analysis
- Developing a project communications management plan
- Facilitating project kickoff meetings
- Developing a procurement management plan



EXECUTION

- Creating a work breakdown structure (WBS)
- Developing a project schedule
- Allocating and managing resources
- Conducting a sprint retrospective
- Sprint planning
- Daily coordination meeting
- User story writing
- Developing a project budget and financial forecast
- Managing project constraints (scope, time, cost)
- Implementing earned value management (EVM)

Prompt Ideas (continued)



MONITORING AND CONTROLLING

- Identifying project risks and mitigation strategies
- Generating status reports
- Tracking and managing project dependencies
- Assessing and prioritizing risks
- Developing a quality management plan
- Managing change requests
- Developing an issue management plan



CLOSURE

- Conducting project closure and postmortem analysis
- Performing benefit realization analysis
- Refining backlog
- Creating a stakeholder engagement and communications management plan
- Designing a change management strategy
- Creating a team development plan



Tool Library



Customized LLM Platform for Project Management

- [*Infinity \(PMI\)*](#)

Multimodal LLM Platforms

- [*ChatGPT \(OpenAI\)*](#)
- [*Copilot \(Microsoft 365\)*](#)
- [*Gemini \(Google\)*](#)
- [*Grok \(X\)*](#)
- [*Claude \(Anthropic\)*](#)

Tool Library (continued)

Customized Plug-ins

New plug-ins are created regularly. These can help with a variety of different tasks, so identify what you need help with and then determine which plug-in can help. Below is just a sampling of available plug-ins.

- [*Consensus*](#): AI research assistant
- [*Scholar GPT*](#): Enhance research efforts
- [*Supernormal*](#): Meeting transcription
- [*Fireflies*](#): Conversation intelligence
- [*Monday.com*](#): Project plans
- [*Tom's Planner*](#): Project plans
- [*Asana*](#): Automated status updates
- [*Reclaim.AI*](#): Intelligent scheduling
- [*Clockwise*](#): Intelligent scheduling
- [*Loom*](#): Intelligent walkthroughs
- [*Autodesk Fusion 360*](#): Prototyping
- [*Smartsheet*](#): Time and cost management
- [*Wrike*](#): Control management
- [*Clickup Brain*](#): Workflow management and automation
- [*Perplexity AI*](#): AI-powered Q&A
- [*Jasper*](#): AI-powered writing assistant
- [*Scholarcy*](#): AI-powered text summarization



Additional Resources



- PMI Thought Leadership [*Talking to the Machine: Prompt Engineering Essentials for Project Professionals*](#)
- PMI Thought Leadership: [*First Movers' Advantage: The Immediate Benefits of Adopting Generative AI For Project Management*](#)
- AI Today podcast by Cognilytica
 - [*Prompt Engineering Best Practices: The Soft Skills of Prompting*](#)
 - [*Prompt Engineering Best Practices: “Hack and Track”*](#)
 - [*Prompt Engineering Best Practices: Using Plug-ins*](#)
 - [*Prompt Engineering Best Practices: Using Custom Instructions*](#)
 - [*Prompt Engineering Best Practices: Use a Prompt Pattern*](#)
 - [*Who is on the AI Team?*](#)
 - [*Determining AI Project Costs*](#)
 - [*Scoping AI Projects*](#)
 - [*Retrieval-Augmented Generation \(RAG\)*](#)
 - [*The Critical AI and Data Skills You Need as a Project Manager*](#)
 - [*When to Do Automation versus AI*](#)
 - [*How to Avoid Getting Screwed with Generative AI*](#)

Additional Resources (continued)

- [*The Drawbacks and Challenges of Generative AI*](#)
- [*Foundation Models, Fine-Tuning, and Domain-Specific LLMs*](#)
- [*Diffusion Models and Image Generation*](#)
- [*Generative AI/LLM—How Does It Work?*](#)
- [*Glossary Series: Structured Data, Unstructured Data, Semistructured Data*](#)
- [*Glossary Series: Data, Dataset, Big Data, DIKW Pyramid*](#)
- [*Glossary Series: Data Preparation, Data Cleaning, Data Splitting, Data Multiplication, Data Transformation*](#)
- [*Glossary Series: OpenAI, GPT, DALL-E, Stable Diffusion*](#)
- Articles: Putting AI into Your Projects
 - [*Who Is on the AI Team?*](#)
 - [*Keeping AI Projects In Check: Scoping AI Projects*](#)
 - [*Determining AI Project Costs*](#)
 - [*What Skills Do you Need to Be an AI Project Manager?*](#)
 - [*Are You Making These Deadly Mistakes with Your AI Projects?*](#)
 - [*The One Practice That Is Separating the AI Successes From the Failures*](#)
 - [*The Worst AI Advice You'll Ever Hear*](#)

