

# AI Text Generation & Prompt Engineering

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## Abstract

This is a submission for the mini project component of the 'AI Text Generation & Prompt Engineering' module of the 'ChatGPT & Gemini AI Advanced E-Degree' course. This document provides an in-depth analysis on the responses provided by ChatGPT, Gemini (formerly known as Bard), and Claude on generating a piece of text. The relevance, coherence, and tone of the responses are the main components of the analysis. The relevance of the responses has been analyzed further to get a comprehensive idea of the text generation power of the Gen-AI tool.

## 1 Introduction

The responses provided by different Gen-AI tools like ChatGPT, Gemini (formerly known as Bard), and Claude to a text generation prompt have been studied and analyzed for their relevance, coherence, and tone. The same prompt was fed to all three models in a new chat so that all of them had the same input information before generating the response.

All the Gen-AI tools generate text based on the given prompt. All the models provide different responses based on their training data. The text generated by all these models is then broken down into components to analyze the relevance to the given input. Relevance is determined based on how many parts of the response pertain to the prompt.

## 2 Input Prompt

*"Provide a 200-word write-up about how a business issue has to be tackled by the business unit in an organization, elaborate on the schedule, process, and methodology suggested."*

The input prompt asks the Gen-AI model to provide a write-up about tackling a business issue by the business unit in an organization, further asking it to elaborate on the schedule, process, and methodology. The main aim of the prompt is to analyze how structured the responses provided by the Gen-AI tool are. The responses provided are also analyzed for their coherence and logical flow.

## 3 Responses

### 3.1 ChatGPT

Addressing a business issue in an organization requires a structured approach by the business unit, focusing on analysis, planning, and execution. Initially, the business unit identifies the root cause through data analysis and stakeholder input, categorizing the issue to ensure an appropriate response. A clear schedule is then established, typically divided into phases: assessment, solution design, implementation, and evaluation. Each phase is time-boxed to maintain momentum, with regular check-ins to track progress.

In the assessment phase, the unit gathers relevant data, assesses current performance metrics, and conducts a SWOT analysis to pinpoint strengths, weaknesses, opportunities, and threats associated with the issue. During the solution design phase, the team formulates potential solutions, engaging stakeholders to refine strategies. A methodology, such as Lean Six Sigma or Agile, can ensure flexibility, quality, and efficiency throughout the process. Lean Six Sigma, for example, helps eliminate inefficiencies, while Agile fosters collaboration and iterative improvements.

The implementation phase requires coordinated action from cross-functional teams, with regular monitoring to address any roadblocks. Finally, in the evaluation phase, outcomes are measured against key performance indicators (KPIs) to assess success and inform future improvements. This structured, phased approach ensures that business issues are addressed comprehensively, promoting sustainable success.

### 3.2 Gemini (Formerly known as Bard)

The business unit is facing a decline in sales over the past quarter, leading to a decrease in revenue and profitability. To address this issue, the unit plans to implement a targeted marketing campaign focused on customer retention and acquisition.

Schedule:

- (1) Week 1: Conduct a thorough analysis of customer data to identify key segments and preferences.
- (2) Week 2: Develop a comprehensive marketing strategy, including messaging, channels, and budget allocation.
- (3) Week 3: Create marketing materials such as email campaigns, social media posts, and promotional offers.
- (4) Week 4: Launch the marketing campaign across multiple channels, including email, social media, and direct mail.
- (5) Week 5: Monitor campaign performance and make necessary adjustments to optimize results.

- (6) Week 6: Analyze the campaign's impact on sales and customer engagement.

Process:

- (1) Problem Identification: Clearly define the problem and its root causes.
- (2) Solution Development: Brainstorm and evaluate potential solutions, considering their feasibility and impact.
- (3) Resource Allocation: Allocate necessary resources, including budget, personnel, and technology.
- (4) Implementation: Execute the chosen solution, following a clear plan and timeline.
- (5) Monitoring and Evaluation: Track progress, measure results, and make adjustments as needed.

Methodology:

- (1) Data-Driven Approach: Utilize customer data and insights to inform decision-making.
- (2) Customer-Centric Focus: Prioritize customer needs and preferences in all marketing efforts.
- (3) Agile Methodology: Embrace flexibility and adaptability to respond to changing market conditions.
- (4) Collaboration and Communication: Foster collaboration among team members and stakeholders to ensure alignment and effective execution.

By following this approach, the business unit aims to revitalize sales, increase customer loyalty, and drive long-term growth.

### 3.3 Claude

When a critical business issue arises within an organization, the affected business unit must take a systematic approach to address it effectively. The first step is to clearly define the problem statement and gather all relevant data and information. This allows the team to fully understand the scope, causes, and potential impacts of the issue. Next, the business unit should establish a detailed project plan and timeline. This should include key milestones, deliverables, and responsibilities assigned to specific team members. Establishing this structure upfront helps ensure the issue is tackled in a coordinated and efficient manner. The core of the resolution process involves thorough analysis to identify potential solutions. This may require conducting market research, financial modeling, competitive benchmarking, or other investigative work. The team should evaluate each option based on criteria such as feasibility, cost, timeline,

and alignment with organizational goals. Once the optimal solution is selected, the business unit must develop a comprehensive implementation plan. This should cover staff training, systems changes, customer communications, and other critical elements required for a successful rollout. Ongoing monitoring and adjustment are also essential to ensure the issue is fully resolved and does not recur. By following this structured approach, the business unit can effectively tackle complex issues and deliver sustainable solutions that drive positive outcomes for the organization.

***Additional output given by Claude***

Here is a 225 word write-up on how a business issue should be tackled by a business unit in an organization: Resolving Business Issues in an OrganizationClick to open document The key points covered in this write-up include:

Clearly defining the problem statement and gathering data Establishing a detailed project plan and timeline Conducting thorough analysis to identify potential solutions Evaluating options based on key criteria Developing a comprehensive implementation plan Monitoring and adjusting the solution as needed This systematic methodology helps ensure the business unit can effectively resolve critical issues in a coordinated and effective manner. Please let me know if you have any other questions or if you'd like me to elaborate on any part of the write-up.

## 4 Analysis

### 4.1 Relevance

#### 4.1.1 ChatGPT

1. Issue Identification and Analysis: The response effectively addresses the identification of the business issue, focusing on the importance of root cause analysis and stakeholder input, which are critical for understanding the problem fully. The mention of data analysis and categorization provides a solid foundation for setting the context.
2. Schedule and Phases: It provides a phased schedule—assessment, solution design, implementation, and evaluation—each with a clear purpose. Time-boxing and regular check-ins are practical details, demonstrating a focus on maintaining momentum and accountability.
3. Process and Methodology: The response mentions Lean Six Sigma and Agile, both of which are relevant and well-regarded methodologies for business problem-solving. Each method is briefly explained in terms of how it supports the process, ensuring flexibility and quality.
4. Evaluation and KPIs: The mention of KPIs in the evaluation phase is highly relevant, as measuring success through performance indicators is essential for understanding the effectiveness of the solution.

Overall, this response provides a comprehensive, practical approach to tackling a business issue, making it highly relevant to the prompt.

#### **4.1.2 Gemini**

1. **Issue Identification:** The response defines the problem clearly (a decline in sales and revenue) and provides a reasonable strategy to counter it (a targeted marketing campaign). This direct approach aligns well with the prompt's emphasis on tackling a business issue.
2. **Schedule and Phases:** It presents a week-by-week schedule with specific activities that reflect a logical progression. Each week has a distinct focus, from analysis and strategy development to implementation and evaluation, which demonstrates a realistic timeline for executing the marketing plan.
3. **Process:** The process section lays out steps that are well-organized and align with a problem-solving methodology. The steps—problem identification, solution development, resource allocation, implementation, and monitoring—are straightforward and cover critical aspects of addressing the issue effectively.
4. **Methodology:** The response introduces a data-driven, customer-centric, and agile approach, all of which are relevant to marketing in a dynamic environment. Emphasizing collaboration adds depth, highlighting the need for teamwork in executing the strategy.

Overall, this response is highly relevant, directly addressing the business issue with actionable steps, a clear schedule, and an adaptable methodology that aligns with the prompt's requirements.

#### **4.1.3 Claude**

1. **Issue Definition and Data Gathering:** The response starts with a clear step to define the problem and gather relevant data, which is essential for fully understanding the scope and potential impact. This aligns with your request for a structured, methodical approach.
2. **Project Plan and Timeline:** Emphasizing the need for a detailed project plan, with milestones, deliverables, and assigned responsibilities, adds practical value. This level of structure supports effective coordination and efficiency, both critical for tackling business issues.
3. **Analysis and Solution Evaluation:** The response highlights thorough analysis, suggesting tools like market research, financial modeling, and competitive benchmarking. It also advises evaluating options based on feasibility, cost, and alignment with goals, which is a strategic approach to ensure the solution is both practical and impactful.

4. **Implementation Plan and Monitoring:** Developing a comprehensive plan that includes staff training and system changes is essential, and the response covers these well. Additionally, the ongoing monitoring and adjustment emphasize adaptability and commitment to resolving the issue sustainably.

Overall, this response is highly relevant and provides a structured, practical approach. It covers all aspects you asked for, including a project timeline, process steps, and methodology, making it well-suited to your prompt.

## **4.2 Coherence**

### **4.2.1 ChatGPT**

1. **Introduction to Structured Approach:** The response begins by stating the need for a structured approach, setting the context for the following steps. This introduction helps anchor the reader, explaining why a phased approach is important.
2. **Phase-by-Phase Breakdown:** The response uses clearly defined phases—assessment, solution design, implementation, and evaluation. Each phase naturally builds on the previous one, making it easy to follow. The transition between phases is smooth, showing how data gathered in assessment flows into solution design, which then leads to implementation and evaluation.
3. **Methodology Selection:** Introducing Lean Six Sigma and Agile as possible methodologies is done seamlessly, with each method’s relevance briefly explained. This provides clarity on how the chosen methodology will influence the process.
4. **Evaluation and Conclusion:** The response concludes by linking the evaluation phase to sustainable success, effectively closing the loop on the process.

Overall, this response is coherent, with a clear and logical flow. Each section connects well, creating a smooth narrative that enhances understanding of the process.

### **4.2.2 Gemini**

1. **Problem Definition and Context:** It starts by explaining the specific issue (declining sales) and the plan to address it (a marketing campaign), providing immediate context. This clear problem statement grounds the entire response.
2. **Weekly Schedule:** The week-by-week schedule is organized and easy to follow. Each week’s activities logically build on the previous week’s, starting with analysis and leading to execution, monitoring, and analysis. This structured approach makes the plan’s progression clear and purposeful.

3. **Process and Methodology:** The response outlines a five-step process, moving smoothly from problem identification to monitoring and evaluation. Each step has a natural progression, and the methodology section reinforces the focus on data, customer needs, and adaptability, which are all relevant for tackling the sales issue.
4. **Conclusion:** The response closes with a clear outcome—revitalizing sales and promoting growth—which ties back to the initial problem statement and highlights the expected results of the campaign.

Overall, the response is coherent, with a clear problem-solving narrative and logical flow from analysis to execution and evaluation.

#### **4.2.3 Claude**

1. **Clear Problem-Solving Steps:** The response begins by stating the need to define the problem and gather data, which sets a logical foundation. Each subsequent step—planning, analysis, evaluation, implementation, and monitoring—builds clearly upon the last, with no abrupt transitions.
2. **Detailed Explanation of Each Step:** Each stage in the process is elaborated in enough detail to make the overall methodology understandable without unnecessary complexity. For example, the explanation of analysis methods like market research and competitive benchmarking is concise but informative, adding depth without sidetracking.
3. **Comprehensive Implementation Focus:** The implementation phase is covered thoroughly, with practical points on training, systems changes, and communication, all of which align well and make the execution plan easy to envision.
4. **Conclusion with Expected Outcome:** The response ends by emphasizing sustainable solutions and positive outcomes, linking back to the initial goal of effectively tackling business issues. This final statement reinforces the objective, ensuring coherence from start to finish.

Overall, the response is coherent and methodical, with a natural progression from problem identification through to monitoring, creating a structured and easy-to-follow explanation.

## **5 Conclusion**

All three responses effectively address the prompt’s requirements, demonstrating a strong understanding of how a business unit should tackle an organizational issue. Each response provides a structured approach that includes a clear problem definition, detailed steps, a project schedule, and a methodology, aligning well with the prompt’s need for a systematic solution.

## 5.1 Comparative Analysis and Strengths

### 5.1.1 ChatGPT

**Relevance:** This response is highly relevant, outlining a phased approach (assessment, solution design, implementation, evaluation) that aligns with organizational needs for problem-solving. The inclusion of methodologies like Lean Six Sigma and Agile provides options tailored to the organization's flexibility and quality requirements, addressing both the prompt and practical concerns.

**Coherence:** ChatGPT's response excels in coherence, with each phase flowing logically into the next. This clear structure enhances readability, making the process easy to follow and the rationale behind each phase apparent.

### 5.1.2 Gemini

**Relevance:** By focusing on a specific issue (declining sales) and a targeted marketing strategy, Gemini's Response is highly relevant for an organization aiming to resolve specific business challenges. The week-by-week schedule demonstrates an actionable timeline, making the response applicable to a real-world scenario.

**Coherence:** The response's week-by-week breakdown and well-defined process steps ensure strong coherence, as each week's activities build on the prior week's actions. This structured narrative adds clarity to the timeline and provides a straightforward path from problem definition to results analysis.

### 5.1.3 Claude

**Relevance:** Claude's Response is comprehensive and relevant, detailing a step-by-step approach from problem definition to monitoring. This response highlights essential areas like data gathering, resource allocation, and staff training, making it practical and applicable across various business contexts.

**Coherence:** With well-organized steps and elaboration on each phase, Claude's Response is methodically coherent. The response maintains clarity throughout, providing depth without overwhelming details. It flows naturally from problem identification to the expected outcome, creating a logical, easy-to-follow structure.

## 5.2 Summary

Each response demonstrates strong relevance to tackling organizational issues, meeting the prompt's requirements with clear schedules, processes, and method-



ologies. ChatGPT's Response stands out for its phased methodology and adaptability with Lean Six Sigma and Agile; Gemini's Response's strength lies in its actionable, sales-focused plan with a week-by-week timeline; and Claude's Response offers a universally applicable framework with comprehensive implementation details.