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Master Thesis

*“Language for Innovation or Innovation in Language?  
Theoretical Foundations & Prompt Engineering  
Conceptualization and Refinement”*

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## Abstract

In the contemporary digital landscape, the relationship between language and innovation has acquired new complexity with the emergence of advanced deep-learning systems, particularly Large Language Models (LLMs). This study investigates the interplay between language and innovation by examining how rhetorical and linguistic structures shape narratives of innovation, and, conversely, how innovation transforms linguistic expression itself. While innovation is frequently addressed within technological, economic, and strategic frameworks - especially in entrepreneurial and managerial literature - its communicative, rhetorical, and linguistic dimensions remain insufficiently theorized.

This research develops an interdisciplinary theoretical framework that draws on communication theory, rhetoric, cognitive linguistics, and digital storytelling to analyze language as both a medium and an outcome of innovation. More specifically, the thesis explores the role of LLMs, such as OpenAI’s ChatGPT, in reshaping communicative practices, processes of meaning-making, and problem-solving strategies. Within this context, prompt engineering is approached not merely as a technical procedure, but as a central discursive practice in human–AI interaction. The study, therefore, examines how prompts influence generated outputs, structure cognitive framing, and model different communicative intentions across contexts.

Methodologically, the project adopts an experimental and comparative design based on AI-generated textual and visual outputs. Through close reading and comparative analysis, it examines how innovative meaning is constructed through different prompt formulations, perspectives, and discourse settings, particularly in business and academic environments. The dialogic experiments are informed by executives in the C-Suite role (like “Chief Innovation Officers”)<sup>1</sup>, which serve as a conceptual and contextual reference point for exploring real-world innovation discourse. In parallel, the study engages both classical and contemporary theoretical models, including Aristotle’s rhetorical triad, Toulmin’s model of argumentation, Shannon and Weaver’s communication model and information theory extensions, and McLuhan’s media ecology and its role (with technology) in shaping human consciousness and culture.

This research contributes to both theory and practice. Theoretically, it advances an integrated framework for understanding AI-mediated communication and the role of language in innovation, and of how LLMs mediate communication and participate in the discursive production of innovation. Methodologically, it demonstrates the value of experimental prompt-based analysis and close reading in studying LLM outputs.

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<sup>1</sup> “60 Leaders of Innovation, by G. Krasadakis”. As explained in its dedicated website (<https://theinnovationmode.com/60-leaders-on-innovation>), “60 Leaders on Innovation” book offers sixty viewpoints in conversation with each other — from corporate innovation veterans at Innosight, BCG, IBM, and Microsoft to early-stage investors, public-sector ministers, and scholars who study what actually works. The book asks 22 questions about innovation culture, methodology, the C-Suite’s role, experimentation, digital transformation, and the future of work, answered by multiple contributors with disagreements that add value. Produced by George Krasadakis — author of Innovation Mode 2.0 (Springer, 2026), holder of [20+ AI/ML patents](#), and founder of [Ainna.ai](#) — together with Robin Nessensohn. A community-built reference, free forever to read and to share.

Practically, it offers guidelines and dialogic schemes for educators, AI developers, and communication strategists to use prompt engineering more effectively. Ultimately, this research argues that language is not simply a vehicle for innovation but also one of its constitutive forces.

By positioning prompt engineering at the intersection of rhetoric, cognition, and AI-mediated communication, the thesis contributes to an expanded understanding of how linguistic practices shape future-oriented problem-solving in entrepreneurial and knowledge-intensive environments.

**Keywords:** Large Language Models (LLMs), prompt engineering, communication theory, innovation discourse, rhetoric, cognitive linguistics, AI-mediated communication, close reading, hook

## Περίληψη

Στο σύγχρονο ψηφιακό περιβάλλον, η σχέση μεταξύ γλώσσας και καινοτομίας έχει αποκτήσει νέα πολυπλοκότητα με την εμφάνιση προηγμένων συστημάτων «εις βάθος μάθησης» ("deep learning"), και ιδιαίτερα των Μεγάλων Γλωσσικών Μοντέλων-ΜΓΜ (Large Language Models – LLMs). Η παρούσα μελέτη διερευνά την αλληλεπίδραση μεταξύ γλώσσας και καινοτομίας εξετάζοντας τον τρόπο με τον οποίο οι ρητορικές και γλωσσικές δομές διαμορφώνουν την καινοτομία και, αντίστροφα, για παράδειγμα χάριν πώς η καινοτομία μετασχηματίζει τη γλωσσική έκφραση. Παρότι η καινοτομία προσεγγίζεται συχνά μέσα από τεχνολογικά, οικονομικά και στρατηγικά πλαίσια, ιδιαίτερα στη βιβλιογραφία της επιχειρηματικότητας και της διοίκησης επιχειρήσεων, οι επικοινωνιακές, ρητορικές και γλωσσικές της διαστάσεις παραμένουν ανεπαρκώς θεωρητικοποιημένες στην έρευνα.

Η συγκεκριμένη μελέτη αναπτύσσει ένα διεπιστημονικό θεωρητικό πλαίσιο που αντλεί στοιχεία από τη θεωρία της επικοινωνίας, τη ρητορική, τη γνωστική γλωσσολογία και το ψηφιακό εξιστόρημα (storytelling), προκειμένου να αναλύσει τη γλώσσα τόσο ως μέσο όσο και ως αποτέλεσμα της καινοτομίας. Ειδικότερα, η διπλωματική εργασία εξετάζει τον ρόλο των LLMs, όπως το ChatGPT της OpenAI, στο μετασχηματισμό των επικοινωνιακών πρακτικών, των διαδικασιών παραγωγής νοήματος και των στρατηγικών επίλυσης προβλημάτων. Στο πλαίσιο αυτό, η "μηχανική προτροπών" (prompt engineering) δεν προσεγγίζεται απλώς ως μια τεχνική διαδικασία, αλλά ως μια κεντρική πρακτική στην αλληλεπίδραση του ανθρώπου με την τεχνητή νοημοσύνη. Η μελέτη εξετάζει πώς τα προτροπικά (prompts) επηρεάζουν τα παραγόμενα αποτελέσματα, πώς διαμορφώνουν γνωστικά πλαίσια αναφοράς και πώς δημιουργούν υποδείγματα/μοντέλα από διαφορετικές επικοινωνιακές προθέσεις σε ποικίλα περιβάλλοντα.

Μεθοδολογικά, το έργο υιοθετεί έναν πειραματικό και συγκριτικό σχεδιασμό βασισμένο σε κείμενα και οπτικό υλικό που παράγονται από συστήματα τεχνητής νοημοσύνης. Μέσω της κριτικής ανάγνωσης και της συγκριτικής ανάλυσης, διερευνά τον τρόπο με τον οποίο κατασκευάζεται «η καινοτομία» μέσα από τις διαφορετικές αποτυπώσεις, οπτικές γωνίες και περιβάλλοντα, ιδιαίτερα σε επιχειρηματικά και ακαδημαϊκά περιβάλλοντα. Τα πειράματα της έρευνας προέρχονται από απαντήσεις στελεχών ανώτατης διοίκησης (C-Suite executives), όπως οι Διευθυντές Καινοτομίας "Chief Innovation Officers", οι οποίες λειτουργούν ως εννοιολογικό σημείο αναφοράς για τη διερεύνηση του λόγου της καινοτομίας σε πραγματικές συνθήκες. Παράλληλα, η έρευνα αξιοποιεί τόσο κλασικά όσο και σύγχρονα θεωρητικά μοντέλα: η ρητορική τριάδα του Αριστοτέλη, το μοντέλο επιχειρηματολογίας του Toulmin, το επικοινωνιακό μοντέλο των Shannon και Weaver και οι προεκτάσεις στη θεωρία της πληροφορίας, καθώς και το οικοσύστημα των μέσων του McLuhan που εξετάζει το ρόλο της τεχνολογίας στη διαμόρφωση της ανθρώπινης συνείδησης και του πολιτισμού.

Η παρούσα έρευνα συμβάλλει τόσο στη θεωρία όσο και στην πράξη. Σε θεωρητικό επίπεδο, προτείνει ένα ολοκληρωμένο πλαίσιο αντίληψης της επικοινωνίας όπως γίνεται κατανοητή από την τεχνητή νοημοσύνη και του ρόλου της γλώσσας στην καινοτομία, αναδεικνύοντας τον τρόπο με τον οποίο τα LLMs διαμεσολαβούν την επικοινωνία και συμμετέχουν στην παραγωγή της καινοτομίας. Σε μεθοδολογικό επίπεδο, αναδεικνύει την αξία της πειραματικής ανάλυσης βασισμένης στα prompts και την κριτική ανάγνωσης για τη μελέτη των αποτελεσμάτων που παράγουν τα LLMs. Σε πρακτικό επίπεδο, προσφέρει κατευθυντήριες γραμμές και διαλογικά σχήματα σε εκπαιδευτικούς, προγραμματιστές

συστημάτων τεχνητής νοημοσύνης και στρατηγικούς επικοινωνίας, προκειμένου να αξιοποιούν αποτελεσματικότερα τη μηχανική προτροπών. Τελικά, η μελέτη υποστηρίζει ότι η γλώσσα δεν αποτελεί απλώς όχημα της καινοτομίας, αλλά μία από τις θεμελιώδεις δυνάμεις που τη συγκροτούν.

Τοποθετώντας τη μηχανική προτροπών στο σημείο τομής μεταξύ ρητορικής, γνωστικής λειτουργίας και επικοινωνίας όπως γίνεται ορατό από την τεχνητή νοημοσύνη, η εργασία συμβάλλει σε μια διευρυμένη κατανόηση του τρόπου με τον οποίο οι γλωσσικές πρακτικές διαμορφώνουν διαδικασίες επίλυσης προβλημάτων και προσανατολισμού προς το μέλλον σε επιχειρηματικά και ακαδημαϊκά περιβάλλοντα.

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## 1. Introduction

### 1.1 Study and Research Design

The relationship between language and innovation has gained renewed relevance in the digital age, especially with the emergence of advanced technologies such as large language models (LLMs). Technologies such as those mentioned before relying on prompt engineering, which needs user input to shape the output and the communication process. These tools are not just existing or stimulating the language we speak today, but they actively change the way we speak, think, and react, and shape how information, creativity, and problem-solving are perceived and communicated. From Aristotle’s Rhetorical Principles of ethos, pathos, and logos (Aristotle., 2007) to McLuhan’s media theory that “the medium is the message.” (McLuhan, 1964) Scholars have understood the importance of language in shaping social perception and progress.

The title “Language of Innovation or Innovation of Language: Theoretical Foundation & Problem-Solving Conceptualization” has a dual inquiry on one side, how language shapes innovation through rhetorical structures and terminology, and on the other side, how language itself evolves through innovative mediums and tools.

The study will address a central issue, which is that while innovation is often explored in technological, economic, or policy contexts, the linguistic and rhetorical part that enables frames and disseminates innovation is under-theorized. Moreover, innovation is not merely an act of invention, but it is an act of communication, where, through language changes or constructs, a meaning is conveyed. Rhetorical patterns, narrative strategies, pragmatics, and semantics play a crucial role in how innovation is perceived and adopted across environments.

At the same time, the evolution of language through digital technologies, particularly LLMs like GPT, calls for an in-depth analysis of how communication practices themselves are being innovated. These systems reflect existing narratives and create new communication channels, such as prompt-based dialogues or AI-driven summaries that shape how human beings interact, co-create, and solve problems. For these reasons, the study engages in meta-communication, where the tools of communication change the framework of language itself.

Large language models can be understood as computational systems that teach patterns, structures, and relationships in textual data. In Apple’s research (2024) on LLMs, they don’t possess human understanding, but they generate context-sensitive responses by creating statistical models in language, and, like this, can participate meaningfully in the communication process between humans and digital media.

The primary purpose of this study will be to develop a theoretical framework that links under the umbrella of communication theory, rhetoric, and linguistics with innovation

and problem-solving processes. The main goal is to understand that language is a medium of innovation but also an evolving entity shaped by and shaping new forms of problem-solving. By connecting the concepts of Aristotle's (ethos, pathos, logos) with contemporary phenomena such as algorithmic text generation and digital storytelling, the study aims to explain that language is not a part of innovation but also, at the same time, is a living system that shapes our future with other factors like the technological, social, and cognitive ones. Moreover, a core objective is based on prompt engineering to serve as a methodological practice and an innovation that transforms how users create meaning with language models.

The framework is based on several pillars, such as the rhetorical dimension of innovation, like persuasive narratives, the semiotic and cognitive processes that enable conceptualism, and the digital era generally, which includes digital media that affect language use, production, and understanding. Furthermore, the pragmatic dimension focuses on the meaning that is shaped by the context and interaction, even with LLMs.

## 1.2 Experimenting for AI with Interaction, Text, and Image

From a methodological perspective, the study follows a quality, theory-driven approach that includes a close reading approach to the information, conceptual analysis, and interactions with AI-generated dialogue based on Krasadakis's book, using it in the form of an experiment. An extended questionnaire with 22 questions was formulated. Moreover, engages with classical and contemporary theories, such as Aristotle's rhetorical triad, Toulmin's argumentation model, Shannon and Weaver's communication model, and McLuhan's media theory. At the same time, it uses the AI systems as communication agents, not as technical tools, which shows that the meaning comes through the interaction, framing, and context in language use.

This methodological framework provides a conceptual connection between the theory of communication and AI interaction by framing prompts as communication acts and outputs as responses with a continuation. This approach will allow us to analyze how the meaning of innovation is constructed through language exchange.

The first tool of examination of the methodology part focuses on AI-generated images that were related to the innovation process, specifically, a semantic and semiotic process that are visually represented, abstract concepts of innovation. Later, in the research, there are two sets of images that are produced. The first is generated through the question of the book "60 Leaders of Innovation (Krasadakis G., 2021)", while the second is generated by the hooks that were taken from the questions that the author created. The comparison of the images creates an analysis of how linguistic framing influences visual symbols, narrative, and conceptual patterns. The quality is not taken into consideration, but rather how innovation is visually defined through prompt engineering.

The second tool of examination of the methodology part focuses on the textual experimentation as an interactional question and answer process. Specifically, prompts are created by the book of Krasadakis and specifically from the 22 questions that he asked innovation officers, while on the opposite side, the AI answered based on executive and academic perspectives. Apart from this, there is another part that examines a random question out of 22 in these two perspectives, but a comparison between ChatGPT and Copilot answers. This gives us a clear interactional context in which innovation discourse is developed. Furthermore, each question has an answer that is translated as interaction, which can be used for close reading and systematic comparison across the two perspectives that were chosen. Based on communication theories that support conceptual communication as interaction, the research examines how it prompts frame roles, expectations, and meanings, and at the same time, the negotiation of it. Through this process, which is mentioned above, the methodology highlights the main role of prompting formulation in the innovative discussion.

### 1.3 Methodological Contributions

The combination of visual and textual analysis within the interactional framework allows a multimodal examination of innovation discourse. The combination of textual and visual generation and question-answer interaction allow for understanding of the meaning constructed and transformed across communicative contexts. Generally, the methodological contribution is in prompt engineering as a linguistic and communicative approach, and this offers us an extra understanding of human and AI interaction in an environment where meaning is changing and can be variable, which makes it easy for many different sectors, such as academic, business, digital media, or industrial.

From this perspective, meaning is co-constructed by the user and the AI system through a textual and multimodal dialogue. Prompt engineering functions as a linguistic and communicative practice that activates AI-textuality, shaping innovation discourse. As a methodological contribution, emphasize it as a communicative strategy that enables analysis of the context and meaning in human and AI interaction. By integrating AI textuality into the analysis, the research becomes more solid and transformative.

In the end, this study seeks to offer new theoretical and practical insights into the relationship between language and innovation, an area that is increasingly relevant in all sectors from education to business, but at the same time in AI development, digital storytelling, and the creative industries. The title includes two perspectives of the same coin and aims to contribute a critical, interdisciplinary way on how meaning and transformation are created and perceived in the century we live in.

## 1.4 Questioning the Study?

“How does language shape the conception and dissemination of innovation across various fields?”

This question includes key terms such as conception and dissemination, which means the creation of meaning and the transmission across academic, business, and technological contexts. Is examined through comparative discourse analysis, with a focus on how innovation is framed, evaluated, and normalized across different communicative contexts.

“What role do rhetorical strategies, specialized terminology, and narrative structures play in this process?”

This focus on the rhetorical, strategic, and narrative structures points to how authority, legitimacy, and coherence are constructed linguistically. This is addressed through rhetorical and semantic analysis, by examining metaphors, lexicon, and narrative patterns that change how innovation is structured.

“In what ways does the evolution of language through LLMs transform communication practices?”

The key term is the evolution of language that refers to the technical aspect of generated outputs and adaptation, while the other side of communication gives emphasis to the interaction and feedback. This question explores the analysis of human and AI interaction, with a focus on text and visuals as communicative outputs shaped by the prompting.

“How can rhetoric, linguistics, and communication theory help understand language’s role in constructing new possibilities?”

The key term is constructing new possibilities that show that language is seen as performative and generative. This question is approached from a theoretical synthesis, with integration of rhetorical, linguistic, and communication models to interpret the innovative discourse with new meanings.

“In what ways does prompt engineering influence human–AI communication and shape linguistic innovation?”

The key term is prompt engineering frames, prompting rhetorical and methodological acts. This question is examined through experimental prompt comparison, showing how linguistic diversity affects AI outputs and contributes to language innovation.

## 2. Reviewing the Literature

The literature review will explore the theoretical foundations of connecting language communication, innovation, and technological transformation with human-AI interaction, adopting a practical approach later. This review will combine classical and modern theories from Aristotle's rhetoric and Toulmin's model of argumentation with frameworks in communication theory, cognitive linguistics, and digital literacy to explain how language operates as both a medium and an innovative product. Verbal communication will be extended beyond that to the non-verbal dimensions, and by acknowledging that the meaning and persuasion are factors shaped by the cultural context, body language, and communicative style. It will mention scholars such as Shannon, Watzlawick, Barnlund, Lakoff, Johnson, McLuhan, and recent ones from Tujela, Bowman, and Pease. The review will explore a multidimensional framework to analyze innovation discourses. Finally, the Large Language Models (LLMs) and prompt engineering will be mentioned as upcoming and meta-communicative systems that transform how humans create concepts, think, and co-create meaning in the digital world.

### 2.1 Rhetorize, Innovate, Communicate, Persuade

The rhetoric is a fundamental part of the relationship between language and innovation that can be connected and understood. To clarify the information, rhetoric can be defined as the strategic use of language to inform, persuade, and shape understanding within a specific context and audience (University of Illinois Springfield, n.d). The following figure illustrates how the rhetoric is created from the interaction of the purpose, writer, topic, audience, and context to contract meaning.

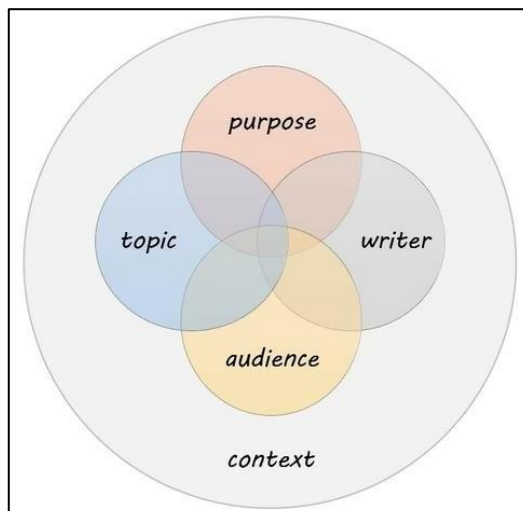


Figure 2.1: The five components of rhetoric (Adopted by University of Illinois Springfield, n.d.)

Furthermore, this figure states the model that Aristotle created about rhetoric as a practice in which persuasion comes through the interplay between the speakers, audience, purpose, and context. Aristotle's Rhetoric from the 4<sup>th</sup> century BCE mentions persuasion as an art of convincing with speech, but also as a cognitive and communicative process through which meaning, belief, and actions are combined (Aristotle, 1909; Kennedy, 1991). By saying this, rhetoric is not something limited to speech, but also, we can consider it as a strategic form of communication that influences understanding and decision-making. From Aristotle, we have three appeals that are essential dimensions of persuasive communication, which are ethos, which shows credibility; pathos, which speaks about emotional resonance; and logos, which is the reasoning by logic behind. All three are persuasive techniques, and in the context of innovation, these are central concepts for how the new ideas that gain legitimacy, have emotional commitment, and value. Innovators, scholars, and entrepreneurs must have the rhetorical balance to convince and gain from their new ideas (Garud, Gehman, & Giuliani, Contextualizing entrepreneurial innovation., 2014; Cornelissen J. P., 2005). The ethos, which is credibility, establishes trust for the innovator's expertise, and pathos, which is the reasoning, gives curiosity and engagement (Mayer, Davis, & Schoorman, 1995). Lastly, the logos gives evidence and coherence, and innovation is rationalized in this way. In other words, either scholars or entrepreneurs are important to apply the rhetorical basis. The ethos brings trust in the innovator's expertise, pathos is about curiosity and emotional engagement, and logos lastly brings to the table the evidence and coherence (Aristotle, 1909).

As discussed above, rhetoric is the language of innovation and the innovation of language. As has been said, rhetoric functions as the idea maker that shapes the meaning and recognition (Perelman & Olbrechts-Tyteca, 1969). Also, innovative communication is inherently persuasive if we look back at Aristotle's rhetoric, and this communication tries to minimize uncertainty and legitimize changes. There are modern innovation narratives from the scientific and entrepreneurial storytelling side, and these narratives construct the uncertainty into an opportunity (Barry & Elmes, 1997). The rhetorical approach of Aristotle speaks about the act of transformation from ideas into forms in everyday life that influence how audiences perceive risk, change, and progress, and in this way becomes a strategic instrument for managing the perception of things in different environments that are complex and need transformation (Lanham, 2006).

Continuously, there is Toulmin's Model of Argumentation (2003), which basically advances understanding by providing a logical way for persuasive reasoning. Rather than considering rhetoric as an abstract concept in persuasion, Toulmin's model gives us an explanation of how arguments function operationally to clarify the innovative side. Specifically, this argument illustrates how arguments justify innovation, by representing a new idea or technological proposition, the data provide support, and the warrant connects the logical and ethical reasoning. This structure mirrors how innovators and leaders present new ideas to stakeholders and, based on the argumentation, legitimize strategic changes with reasoning. Finally, rhetoric is a system of innovation based on reasoning (Toulmin, 2003; Crosswhite, 1996).

Nevertheless, Artificial Intelligence (AI) and LLMs, which are Large Language Models, introduce new rhetorical meanings (Floridi, Cows, Beltrametti, & al., 2018; Suchman, 1987). AI communication shows us the interaction as a central clue in rhetoric, shifting persuasion from human-machine to a dialogic process. Specifically, every prompt directed to an AI system functions as a rhetorical act that combines the three principles of ethos, user authority, and intention, the logos, which brings clarity of instructions, and pathos, the emotional framework (Aristotle, 1909; Grice, 1975).

One of the most important parts is that the output from the AI-generated model depends on how the rhetorical components are going to be encoded within the prompt language model (Qian, 2023; Kress, 2010). This emphasis on the role of the user in shaping persuasive outcomes through the dialogue, which is basically interaction. Similarly, Toulmin's argumentation model is parallel with the interactional logic and the AI dialogue, where the user requests, and the data are the cues (Toulmin, 2003; Suchman, 1987), the warrant is the linguistic model that connects the output with the meaning and logic. To this point, a meta-rhetoric process is going on where humans and machines create feedback, and they have a clear scope (McLuhan, 1964).

Moreover, rhetoric is not only a description of innovation itself and how it is externalized, but also explains how innovation is created through language, logic, and emotions. AI interaction maximizes the rhetorical process by making persuasion interactive. So, communication or even the AI interaction frames the rhetorical ideas which became thinkable, shareable, and actionable.

Communication theory expands our understanding of how messages circulate, evolve, and have meaning within the systems of exchange. Rhetoric through persuasion examines the processes and the ways that the meanings are transmitted, received, and interpreted. From the interactional point of view, this section introduces communication models that conceptualize communication as transmission. Upcoming will be explored the model of Shannon and Weaver's information theory will be explored, along with Watzlawick and Barnlund's interactional perspectives, which are integrated with the intercultural and non-verbal communication of Tujela, Bowman, and Pease. The frameworks will provide a theoretical understanding of the innovation matter as a multi-perspective communication process that operates in the verbal, non-verbal, and technological domains.

Summing up, the practical findings of this part show how rhetorical theory becomes more of an operational interaction with the help of LLMs. Visually, the outputs that are generated through the prompting reveal that prompts work as rhetorical acts that encode intention, emotion, and reasoning, which come from the ethos, pathos, and logos (Aristotle, 1909). This is evident from the practical work (pp. 46-100) through the cooperative image-generation analysis, where different prompt formulations can affect and produce different outcomes. About prompts, if the user emphasizes the organizational culture, then the result will center on people, collaboration, and values. On the other hand, if the prompt is on the technological side, the visuals or the answer will be towards technological terms, reflecting how rhetorical framing shapes meaning

construction (Lanham, 2006). This confirms that AI includes rhetorical interaction by combining linguistic frameworks into semantic and visual structures. The innovation comes from fundamentally different visual metaphors and explanatory structures depending on the rhetorical orientation in the prompt, confirming that rhetoric is a constitutive force in shaping the innovation (Crosswhite, 1996). Toulmin's model of argumentation appears in structuring AI responses because claims become the main statements, data appear as supporting visuals, and warrants come out of the logic that is used by the LLMs. Moreover, the practical section (pp. 46 -100) confirms that rhetorical framing is not something that remains abstract but is shaping the semantic, visual, and argumentative patterns from LLMs. Prompting is a persuasive microtext that guides the LLMs to adopt characteristics and concepts of innovation, proving that rhetoric is not only in human cognition but also part of the LLMs.

## 2.2 Communicate to Transmit and Interact

Communication is both a process and a fundamental system to analyze how innovation is expressed and interpreted by others (Shannon & Weaver, 1949; Watzlawick, 1967). Communication theory provides analytical tools for understanding how the meaning is constructed and negotiated. The theory provides a bridge between rhetorical transmissions and the meaning that is negotiated and transformed (Fairclough, 1995). From classical to contemporary models, there are linear and transactional, intercultural and non-verbal ways that show how human interaction evolves from a simple message to a complex one, which constructs the meaning by the context (Hall, 1976). The linear transmission model represents the Shannon & Weaver model, which shows communication as a process of sender, message, channel, noise, and receiver (see figure 2.2). Having LLMs theories, we can examine from an analytical lens the dynamics between the input that is given and the system response, but also at the same time, the feedback (Suchman, 1987; Floridi, Cowls, Beltrametti, & al., 2018). An interactional perspective would show that human-AI communication can be understood as feedback in the process, where prompts and responses not only transmit but also involve iterative communication.

### 2.2.1 Classical & Systems Models

When we mention early concepts in communication, we take the information from the theory of Shannon and Weaver (1948) who mentions communication as the transmission of information from a source that uses channels to communicate to the receiver, with emphasis on the noise that is between, and for this reason, the feedback is so important to ensure accuracy. Based on this theory, we have a linear principle that the meaning can be encoded, transmitted, and decoded as an idea in linguistic and technological systems (Cherry, 1957).

But before we move forward, let’s look at the principles of communication theory, which provide the foundational insights of how the meaning is transmitted, negotiated, and co-created across interpersonal and technological environments (Watzlawick, 1967; Barnlund, 1970). This classic model, as mentioned above, is a linear process of encoding, transmitting, and decoding messages, emphasizing the noise and feedback as determinants of accuracy, and it remains essential for understanding informational clarity in different contexts (Littlejohn & Foss, 2009). Their contribution is influential as they connected mathematical reasoning to communication, conceptualizing messages as also establishing foundations for later research (Rogers, 1986). Based on the distinctions of semantic noise, we can find this information very helpful for innovation settings where terminology, interdisciplinary collaboration, and digital mediation increase miscommunication. Furthermore, redundancy enhances reliability while the channel capacity gives emphasis on the limits of the human and technological systems during the process of the information that is crucial in innovative discussions. There are three problem levels: firstly, the engineering problem, the semantic one, and the effectiveness that shape the approaches of making meaning and the impact of the message itself (Shannon & Weaver, 1949).

Following the Shannon and Weaver model, which shows how communication is structured and how information is transmitted, encoded, and decoded, and potential distortions through different stages.

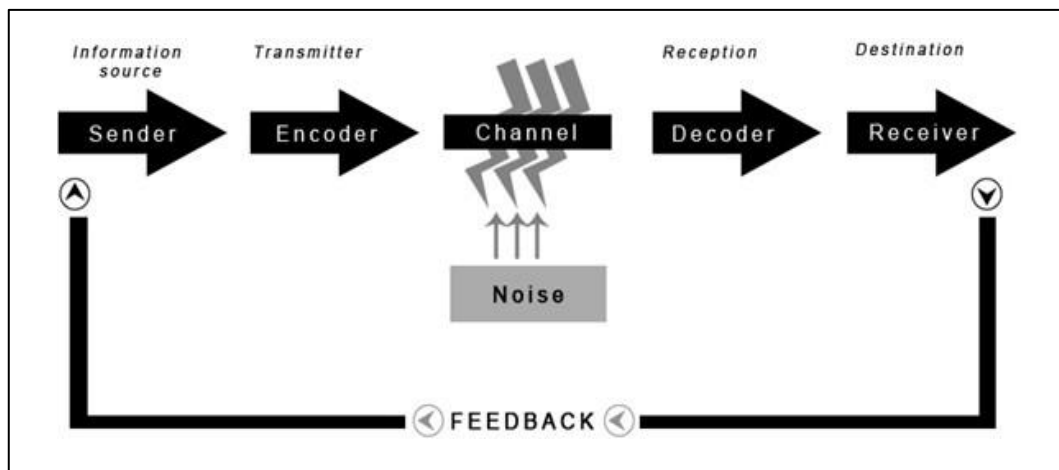


Figure 2.2 The Classical Model of Communication (Adopted by Communication Theory)<sup>2</sup>

This linear framework, which is adapted by Shannon and Weaver, gives us the basis for understanding how communication problems can be created through technical, semantic, and effectiveness levels, something that will be elaborated further in the research. Moreover, Shannon and Weaver’s collaborative model is not a technical framework but rather represents one of the first attempts to formalize communication as a structured, analytical system. While the mathematical foundation exists, the model provides more information on human communication by distinguishing the three levels

<sup>2</sup> Communication Theory: Shannon and Weaver Model of Communication at <https://www.communicationtheory.org/shannon-and-weaver-model-of-communication>, accessed in May.

that are mentioned above, such as the engineering level (accuracy of signal transmission), the semantic level (accuracy of meaning interpretation), and the effectiveness level (impact on behavior), and this elaboration was critical as it clarified the transmission, which is not guaranteed in the process of understanding the message. Additionally, the feedback that is included in the model above emphasizes that without response and correction, communication will be disrupted by the noise at every stage of the process (Shannon & Weaver, 1949).

One of the main areas of this model is the focus on the noise as an ever-present disruptor of communication quality. Noise is not only a technical disturbance, but it's a multi-layered phenomenon that affects how the messages are sent, received, and acted upon. The authors included semantic noise-ambiguity, vague terminology, and cultural differences. In innovation today, interdisciplinary teams must negotiate shared meaning across diverse expertise areas, as semantic noise can affect problem-solving and ideation.

Another part of the theory is the feedback, which was introduced mainly by Weaver's interpretation and later applications of the model. Feedback transforms the linear framework into a "loop" as communication is self-correcting. When discussing innovation processes, feedback loops are essential, as they provide opportunities to refine ideas, correct misunderstandings, test prototypes, and align expectations. Also, LLMs rely on feedback as iterative prompting and self-correction give more relevant outputs.

Shannon and Weaver (1949) introduced the idea of channel capacity, the notion that every communication channel has limits regarding the amount of information that it can transmit, without losing accuracy. The addition from the humanistic sector provided a strong metaphor for cognitive load, handling volumes of data, complex tasks, and keeping up with timelines, especially when communication demands exceed an individual's or a system's capacity.

As important as the above, the encoding and decoding of the information frames the communication as a process requiring shared codes. Weaver emphasizes that for communication, the sender and the receiver must share sufficient common ground, such as linguistic, cultural, or conceptual, to encode or decode messages successfully. Something that we find very useful in global innovation settings, where misalignments in shared codes can lead to breakdowns in the collaboration process (Shannon & Weaver, 1949).

Finally, the Shannon and Weaver framework set the stage for later developments in communication theory by offering different dimensions, such as noise, redundancy, transmission, channels, and encoding, that shape how researchers analyze communication nowadays, both human and LLMs. This theory provided a conceptual bridge between different sectors such as engineering, linguistics, psychology, and organizational studies, making it foundational for being understood in human and in digital networks, informational systems, and LLMs.

Interactional and transactional models are introduced by Watzlawick, Bavelas, and Jackson (1967) and Barnlund (1970) which are mentioned as a dynamic process that

involves continuous exchange. These perceptions emphasize the role of influence, context, and relational dynamics, all which shape innovation discourse. The feedback gave the shift from the linear approach to take a co-constructive road, by saying that the meaning is not merely transmitted but actively negotiated, where the ambiguity and creative collaboration are the main parts.

In the global network, intercultural communication is critical. Tujela (2019) argues that effective communication across different cultures is in high demand to foster empathy, contextual sensitivity, and the ability to be adaptive to diverse expectations and norms, which is recommended for global innovation teams. The role of non-verbal and paralinguistic is crucial, as is also Bowman (2020) and Pease and Pease (2019) demonstrate that body language, gestures, and tone are half of communication. All the above are connected to the Shannon & Weaver model assumption of message clarity by showing that the meaning cannot be reduced to encoded information alone, but depends on the cues that shape the different interpretations across different settings, environments, etc.

All these theories show that communication is not something neutral or something linguistic; it is embodied, contextual, and culturally related. Understanding these dynamics is indispensable for analyzing how innovation messages are produced and interpreted. From linear to relational, intercultural, and a combination of perspectives illustrates how communication operates as a complex, adaptive system that is connected to how innovation is articulated, coordinated, and transformed in both human and digital environments.

Moreover, the linear approach has been challenged by different scholars, such as Watzlawick, Bavelas, and Jackson (1967) and Barnlund (1970), who proposed the interactional and transactional models that emphasize continuous, circular, and reciprocal processes. As said, meaning is not merely transmitted but is co-created through the message exchange and interpretation.

Following, there is the Interactional Model of Communication that shifts linear transmission to a reciprocal process, adding the psychological content and the physical one, whose meaning is continuously negotiated between participants.

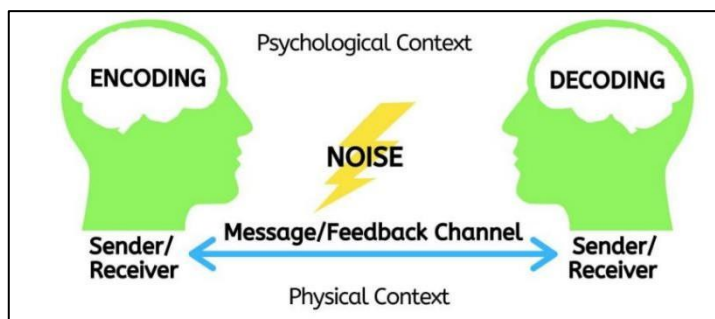


Figure 2.3 Interactional Model of Communication (Adapted by Lapum, St-Amant, Hughes, and Garmaise (2020)).

This perspective adds new foregrounds such as feedback, context, and interpretation, making the dynamics of communication understandable. Following, we see the Transactional Model of communication in a nutshell by Barnlund (1970), specifically a focus on the relational, cultural, and social context.

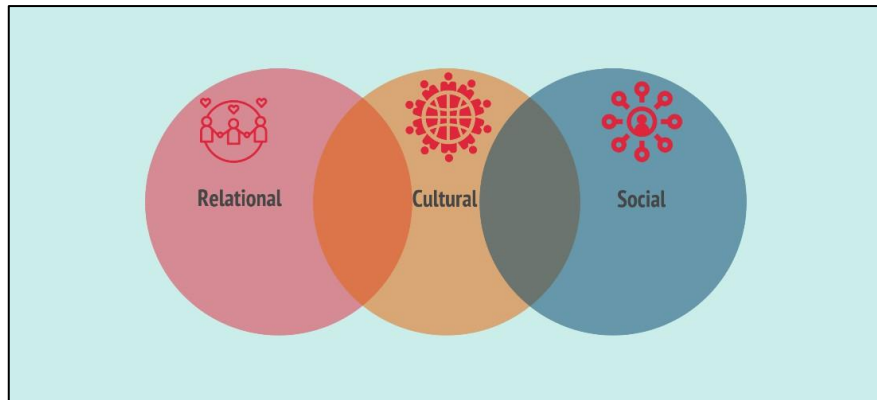


Figure 2.4 The relational, cultural, and social context of the transactional model. (Adapted from Barnlund's transactional communication model).

This model, which is mentioned in the figure (see 2.4), foregrounds the relational, cultural, and social contexts that contribute to meaning making rather than the outside contexts. When this model is applied within the LLM frameworks becomes relevant as the prompt input and output, which include response and feedback, they copy the same transactional cycle of encoding, decoding, and negotiating the meaning. By saying this, the LLM loop works within the relational and contextual spaces that are shaped by human intention, culture, norms, and language, showing that the classic communication theory is taking part in human-machine interaction.

In the next figure, we can recognize the structural parallels between human-AI and human-human interaction, giving emphasis on how the meaning and interpretation of emotions are obvious through processes of feedback and mediation.

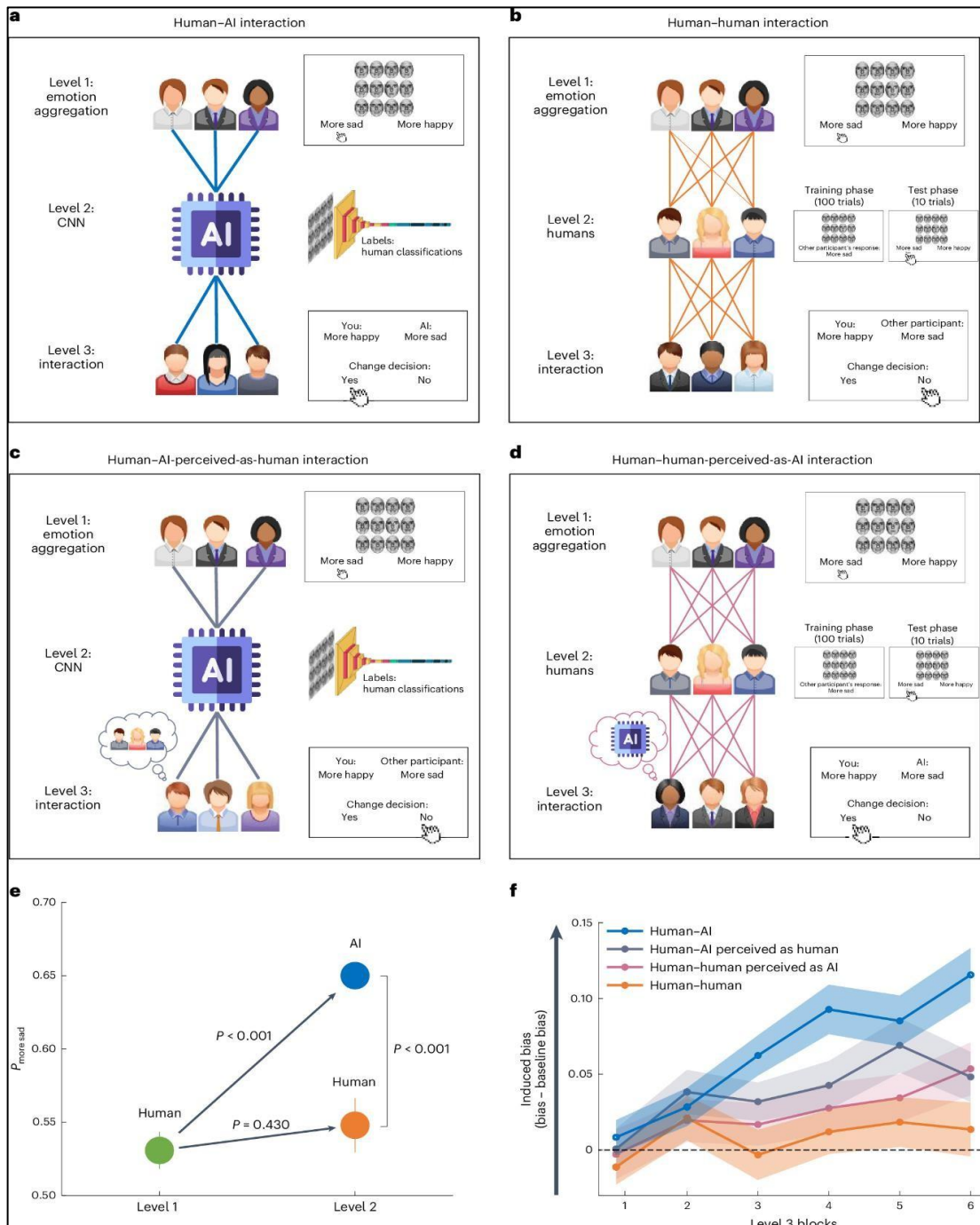


Figure 2.5 Comparison of the human-human and human-AI interaction (Adapted by Medium Data Driven Investor)<sup>3</sup>

This diagram shows a cognitive-system communication loop between humans and LLMs, where the meaning comes through an iterative cycle of prompting, interpretation, and feedback. The human user encodes the message through linguistic input, which the model processes, and, with a combination of the previous data,

<sup>3</sup> Medium Data Driven Investor, at <https://medium.datadriveninvestor.com/the-great-ai-alignment-debate-why-your-chatgpt-conversations-matter-more-than-you-think-e4a6026ce4d8>, accessed in April.

generates a response that is then interpreted by the human, who later evaluates and gives feedback, which brings refinement of meaning. This way, the loop represents a transactional communication process, whose understanding is negotiated all the time, something that we also see in classic communication theory, and now with the interaction between humans and machines. But let's look at the diagram step by step.

Firstly, there are panels from A-D which show interaction configurations, starting with panel A, representing the direct human and AI-interaction in 3 levels, and show an unidirectional process with limited feedback and collection of data from the input to have an output.

1. Level 1 (Emotion aggregation): The individual human judgement is collected as input.
2. Level 2 (CNN): The inputs are processed by the LLMs and act as an intermediary that transforms the human input into a systematic output.
3. Level 3 (Interaction): The human receives the response and decides to keep it or to change it.

Panel B shows the human-to-human interaction, which emphasizes the reciprocal feedback, social influence, and meaning-making that is shared between humans.

1. Level 1: Emotion aggregation still begins at the individual level.
2. Level 2 (Humans): Multiple humans interact, they exchange perspectives and learn through training and test phases.
3. Level 3: The final decision comes from negotiation rather than algorithmic mediation.

Panel C keeps the structure of Panel A but shows the human as a participant. Also, we are level 2, which is still algorithmic, and the user attributes to the system. We see a change into level 3, where the misperception changes the interaction, increasing trust and decision-making. So, perception reshapes communication dynamics.

Panel D shows human-to-human interaction perceived as AI-interaction, specifically showing a human network that is wrongly perceived as AI-driven. Although the decisions were made by humans, the belief that AI was involved reduces the social accountability, so the perception changes and the evaluation of the outcomes as well. This shows how agency can impact authority, trust, and bias.

Panels E and F show the effects and outcomes of this, specifically the E demonstrates the probability of more sad responses, comparing the emotional judgements through interactional levels. Shows the difference between human and AI decisions and how structure and perception can affect the outcomes.

Panel F demonstrates the tracking of biases that are repeatedly repeated in interactional blocks. Human–AI interactions, especially when AI is perceived as human, demonstrate higher induced bias if we compare with the human-human interaction. This confirms that AI mediation amplifies bias through the feedback loops.

This diagram is used because it operates communication theory as something that has different levels rather than something that is a linear exchange of messages. Visualizing the different levels of emotion aggregation, mediation, and interaction, it shows how

the meaning is produced, interpreted, and reshaped through feedback across different communication channels. The comparison between human–human and human–AI interactions emphasizes how mediation structures feedback, authority, and perception, while maintaining the principles found in classical communication theory. So, the diagram makes sense in how the meaning is negotiated through prompt- response-feedback loops and opens the discussion for more communication and innovation.

Overall, this section shows that communication theory is a fundamental framework for the understanding of meaning-making and how it is negotiated within innovation discourses. From the linear model of Shannon and Weaver to interactional and transactional models, communication is evolving from simple transmission to dynamic ones, and feedback is changing based on the context, relationships, and interpretation. A combination of classic theories with the LLMs reveals structural parallels, as mentioned above, prompt-response-feedback cycles that mirror communication loops. So, communication theory remains relevant in both human- human interaction and human-machine interaction in today’s innovative contexts.

### 2.2.2 Intercultural Communication

In the global context, communication requires linguistic accuracy and sensitivity to cultural frameworks (Byram, 1997; Deardorff, 2006). Based on the theory of Tujela (2019), Intercultural communication gives emphasis to the effectiveness across cultures, which depends on context awareness, cultural empathy, and adaptability to diverse norms, so the innovation itself will occur in the multilayered social systems (Castells, 2010).

By saying this, the AI discourse, LLMs such as ChatGPT or Microsoft Copilot operate like intercultural agents (Suchman, 1987), as their interaction is with users from all around the world with different cultures, local norms, idioms, and diverse expectations (Androutsopoulos, 2006). Prompt engineering, in this sense, becomes a cross-cultural mechanism that moves between linguistic clarity and cultural appropriateness (Kress, 2010; Grice, 1975). By saying this, the AI discourse, LLMs such as ChatGPT or Microsoft Copilot operate. Specifically, prompt engineering can be understood as an intercultural communication practice that negotiates the meaning by translating the culture into linguistically explicit instructions. If we take into consideration Grice’s cooperative principle, effective prompting relies on relevance, clarity, and intention, and the assumptions aren’t universal but also have various contexts based on the culture. Therefore, the formulation of the prompting must be treated with sensitivity to implicit meanings, norms, and cultural context.

From a semiotic perspective, prompting is an operator of meaning design (Kress, 2010), where the language functions as a technical input and as a culturally semiotic resource. Specifically, users select the lexical choices, framework, and different levels of direct

language to align their communication intentions with the capabilities of AI systems, and in that prompt becomes a mediator between human cultural knowledge and an LLM (Dai & Hua, 2024).

Moreover, recent research on intercultural communication shows that prompting is a site of cultural translation, where users change their language to compensate for perceived cultural gaps, limitations, and biases that exist in AI systems. In this context, a successful prompt needs awareness of how the context, relations, and dominant linguistic norms influence the outputs. So, prompt engineering optimizes the performance, shapes the innovation and meaning, but at the same time aligns with the cultural assumptions and intentions of the user and with the AI system logic. Innovation in language is also an act of intercultural communication innovation, demanding sensitivity as the context changes, and also the social systems change (Nonaka & Takeuchi, 1995).

As mentioned above, linguistic innovation emerges not only as a technical but also as a socially situated and intercultural act. The context and digital media are constantly involving systems that create new meaning, expressions, and communication in which the meaning is constantly negotiated across all cultural backgrounds. From Nonaka and Takeuchi's knowledge-creation theory, innovative language can be understood as a dynamic process of interaction between the cultural knowledge and the explicit linguistic forms, where the meaning is co-constructed. In AI-mediated environments, complexity is present as innovation comes through human-machine systems and has a continuous adaptation to the differences across participants and communication contexts.

Recent scholarship strengthens this view by theoretically positioning AI-mediated discourse as a constantly developing environment of intercultural communication. In the research of De Gruyter Brill (2024) is demonstrated that LLMs participate in meaning-making processes that reflect cultural diversity, communicative power relations, and diverse contexts, so they reinforce the need for cultural interaction strategies. In AI systems, it is obvious that they reshape the intercultural communication processes by linguistic choices, discourse frameworks, norms, and functioning simultaneously as technological tools and social actors within intercultural exchanges (Yang, Zhao, & Luo, 2024).

Evidence shows that users adapt their prompting based on the cultural limitations and biases of AI systems, emphasizing that artificial and human interaction becomes a dynamic site of cultural alignment (Sarwari, Javed, Adnan, & Wahab, 2024). Furthermore, recent analysis emphasizes that AI is not only a transmitter of intercultural meaning but actively transforms it, so it influences how cultural identities, values, and communicative intentions are created and negotiated in digital environments. These studies reinforce the statement that prompt engineering operates as a form of intercultural communication practice, where the language, cultural context, and awareness are critical for meaningful and innovative interaction.

### 2.2.3 Non-verbal and Paralinguistic Communication

The communication theory originally focuses on verbal symbols and on non-verbal actions. Based on Bowman (2020). Communication between cultures shows that more than 60% of communicative effectiveness comes from body language, gestures, tone, and eye contact. These non-verbal "actions" make the communication more enriching as they provide emotional and contextual depth (Burgoon, Guerrero, & Floyd, 2016; Ting-Toomey, 1999).

By saying this, LLMs generate only text, so paralinguistic features, which can be the tone, the rhythm, and the pitch, are embedded in prompts and outputs (Kress, 2010; Trager, 1958). The user of AI will receive an answer based on the phrasing, punctuation, and lexical choice that they make, which will present the nonverbal expression in a text form (Halliday, 1978). The tone and emotion of the AI response will reflect the human input (Floridi, Cows, Beltrametti, & al., 2018).

The human and LLMs interaction, concept-wise, paralinguistic communication is not eliminating something but instead transforms. Even though LLMs don't have embodied channels such as facial expressions, gestures, tone, etc., they simulate paralinguistic meaning through the textual features. For example, syntactic, punctuation, modality, lexical intensity, and discourse style function as tone, rhythm, and emphasis, allowing users to have emotional and relational clues from the textual interface (Kress, 2010; Halliday, 1978). The instructions that the human user gives, such as "respond as CEO" or "academically", analytical research is conducted in Chapter 3, which includes an experiment in ChatGPT in these two perspectives, working as a meta-communication and paralinguistic cue that guides the rhetorical aspect of the AI's output (Floridi, Cows, Beltrametti, & al., 2018; Trager, 1958). By saying all the above, paralinguistic meaning is an extra encoded linguistic message in the communication that exists between LLMs and humans, allowing for a discourse to recreate aspects of embodied interaction in a diverse way and rhetorically to design rather than face-to-face interaction (McLuhan, 1964).

Paralinguistic communication is also mentioned in Pease (2019) that the body speaks before words do; things like gestures and expressions function as tools of persuasion and relations (Burgoon, Guerrero, & Floyd, 2016). Taking this from Aristotle (Aristotle, 1909) and later on by Pease, in today's world, AI systems function in a non-verbal communication through linguistic means, such as vocabulary, phrasing, and style. The textual signals through LLMs convey tones, gestures, and pitch to cover the gap between human embodiment and AI (Kress, 2010). In conclusion, the study of paralinguistic and non-verbal communication gives us information about the rhetorical design of prompting and places emphasis on how digital discourses re-create the physical communication we had until now into digital communication throughout the linguistic parameters (McLuhan, 1964; Kress, 2010).

So, eventually, the classical, intercultural, and non-verbal perspectives of communication theory reveal that the meaning can be dynamic, contextual, and embodied (Watzlawick, Beavin, & Jackson, 1967). So, it is connected linguistically and explores how the conceptual structures and mental models shape the way we think, not only in human communication but also in digital communication, which also interprets innovation discourses.

#### 2.2.4 Communication Models and Language Models

Communication models are conceptual frameworks that show how meaning is transmitted, interpreted, and negotiated between individuals. For example, in the classic communication theory, they introduced models to simplify the communication itself by using core elements such as sender, message, channel, receiver, context, and feedback (Shannon & Weaver, 1949; Littlejohn & Foss, 2009). These models shape the communication processes and how they are understood, analyzed, and interpreted. The models from linear transmission frameworks to interactional and transactional approaches give emphasis to the feedback, construction of meaning, and context (Watzlawick, Beavin, & Jackson, 1967; Barnlund, 1970). So, the meaning emerges through interaction, interpretation, and negotiation.

Moreover, LLMs are computational and communication models. They operate as input and output processes, where the prompt takes the role of an encoded message and generates responses that function as decoded outputs that are shaped by linguistic patterns rather than intentional understanding. The LLMs, even though they don't have communicative intent, participate in a sense in mean-making by producing context-sensitive responses that affect interpretation and decision-making.

Finally, research shows how LLMs transform the classical communication model, which is encoded and decoded in a way and dynamically creates new forms of interaction, as mentioned in the proceedings of the ACM article (Valencia et al., 2023) Sections 2.4 and 3.1. These systems give feedback, noise, and context, changing the traditional communication models into computational and algorithmic ones. Taking into consideration the LLMs as communication models provides us with a theoretical foundation for the analysis of LLMs discourse within innovation as well as environments.

Summing up, comparing the academic and CEO responses, it's clear evidence of how classical and contemporary communication are used with the LLMs (Shannon & Weaver, 1949). Specifically, Shannon and Weaver's linear model is an encoder and decoder of academic structure answers, where it prioritizes information accuracy, conceptual precision, and clarity. On the other side, Watzlawick's and Barnlund's interactional models became visible in the CEO response, which relies on the narrative, emotion, and storytelling that is similar to human interpersonal communication, where the meaning emerges from the context and not from the information itself.

Furthermore, there are also cues of paralinguistics that are obvious to the outcome, characteristics such as tone, rhythm, and style, depending on the prompt, even if it is missing the voice and gesture, digital communication has non-verbal signals. Also, by prompting "answer as a CEO," "answer academically," the LLMs are instructed to adopt situated roles, and the system adapts to the communicative approach accordingly, which also refers to Tujela's and Bowman's theories on cultural frameworks and communicative appropriateness. The theory aligns with the practical outcomes that the LLMs tools don't generate content simply, but they simulate communicational styles and patterns, which make the communication itself essential for the general understanding of how meaning is negotiated from prompting. This mapping shows that classical communication is valid and helpful for interpreting AI discourse when we speak about prompt-driven interaction.

### 2.3 Cognitive Linguistics and Conceptual Metaphor Theory

Entering the field of cognitive linguistics and metaphorical acts, we can understand how language shapes human thought and innovation in conceptualization and communication. Based on Lakoff and Johnson (1980), who spoke about the conceptual metaphor theory, metaphors are not something that we use because they are stylish or just expressions but are fundamental cognitive models that individuals use to structure their everyday life. These enable abstract concepts like creativity, innovation, and technological progress to become understandable to others through familiar, embodied experiences. So, language is not a neutral tool of communication, but it's a cognitive one that is structured through metaphorical concepts. (Johnson, 1987; Evans & Green, 2006)

Lakoff and Johnson (1980) support that metaphors function as mental frameworks of perception and reasoning. Metaphorical sentences reveal how societies frame changes and progress through biological and ecological experiences. These influences not only affect how an individual talks about innovations but also affect decision-making, policy framing, and organizational communication (Cornelissen, 2005; Fairclough, 1995). In conclusion, the metaphor provides insights into the cognitive and linguistic mechanisms that create innovation across different disciplines and cultures.

Metaphors are conceptual tools of innovation; they connect the known and the unknown information, allowing novel ideas to be anchored in shared cultural meaning. Innovation can be understood as a metaphorical process for connecting existing knowledge. Also, metaphors and frameworks take the role of innovation engines, as they bridge the gap and allow the new ideas to be shared. Innovation is understood through the metaphorical process and involves combining the old concepts to generate new cognitive and communicative possibilities (Schumpeter, 1934; Nonaka & Takeuchi, 1995). For example, we moved from the industrial revolution into the digital one.

In the interaction between humans and AI, these metaphorical and cognitive cues are not disappearing, but they are reproduced through the computational side of LLMs. Large Language Models (LLMs) have taken over, reproducing and reshaping the metaphorical structures. These models are trained in the human language; they internalize and replicate the conceptual metaphorical phrases that exist in human discourse (Lakoff G., 1993; Floridi, Cowls, Beltrametti, & al., 2018). Even though LLMs lack embodied characteristics, they are based on statistically learned linguistic data that reflect the culturally dominant metaphors. Text that is generated from the LLM about innovation draws upon the cultural frameworks that we mentioned above; however, the prompt engineering, which is part of the communication between humans and LLMs, can also be influenced as the AI can interpret the metaphors, and enables exploration of alternative paths. By saying this above, prompting functions as a meta-cognitive and meta-linguistic mechanism that enables metaphorical frameworks. This can be characterized as a creative process between human and algorithmic reasoning (McLuhan, 1964; Grice, 1975).

In conclusion, cognitive linguistics and conceptual metaphors theory can be used for the interpretation of understanding human and AI innovative discourses. Basically, they show that the meaning can be transmitted through language, but with the combination of human cognition, linguistic form, and machine learning, it can produce new ways of thinking, communicating, and innovating.

Summing up, the practical image-generation experiments strongly support Lakoff and Johnson's arguments that metaphors function as cognitive tools through communication, and innovation is conceptualized (Lakoff & Johnson, *Metaphors We Live By.*, 1980). For instance, the AI-produced image (page 100) relies on culturally metaphorical structures, such as lightbulbs, which symbolize ideas and creativity, gears and mechanical tools represent the organizational capability, more recipes and cooking metaphorically frame the combination of capabilities, and eyeglasses or "vision" imagery signify strategic foresight. These visual metaphors show how linguistic conceptual maps are translated into visual representations by LLMs.

All these metaphorical representations are not random visual choices, but they show the deep-rooted conceptualization that the LLMs have in the dominant linguistic and cultural patterns that exist in the data, something that mirrors the human societies, which brings innovation (Kövecses, 2010)

The recurrence of these metaphors across different prompting formulations shows that both humans and LLMs rely on metaphors to translate abstract innovation concepts into strong and cognitively accessible frames. These findings match the structure-mapping theory, which deals with how the meaning emerges through systematic correspondences between the familiar sources and the more abstract ones. Furthermore, the practical analysis (pp. 20-120) demonstrates how metaphors function as cognitive bridges between human thought and LLM-generated content (Gentner, 1983). Through this process, discourse is at the same level as the human conceptual organization rather than creating a new structure.

By the examination that follows, it is evident that metaphors function as linguistic devices but also as representational mechanisms through which AI constructs coherence and conceptualizations. In conclusion, the practical findings reinforce the theoretical statement that metaphor's structure both thinking and communication in ways that shape innovation in both textual and visual forms (Fauconnier & Turner, 2002).

## 2.4 Conditions of Meaning in the Digital World

The emergence of digital media and platforms has transformed the way that language operates in society as an environmental experience (McLuhan, 1964). Based on the theory of McLuhan (1964) and the slogan "the medium is the message," suggest that the form of communication reshapes the perceptions we have, the social relations, and the cognitive habits, even if there isn't a specific context. The media don't carry messages about being innovative, but rather the conditions under which the innovation is happening (McLuhan, 1964; Manovich, 2001).

Rhetoric, specifically digital, examines how persuasive communication is and the discourses that are produced in the digital environments (Fairclough, 1995). Traditional rhetoric of Aristotle (1909) asks for a speaker, audience, and context; on the other hand, digital rhetoric is constructed within networks, interactivity, and algorithm spaces. What I mean by that is that hyperlink, recommendation systems, interfaces, and platforms structure and evaluate innovative messages (Manovich, 2001). These ideas are not isolated, but they are part of the digital ecosystems of comments, rankings, visualizations, and AI prompting (Van Dijck, 2013).

Furthermore, mentioning Large Language Models can be received as a new digital media of rhetoric, though they don't eliminate existing discourses, but they are part of the ongoing reconfiguration of them (Floridi, Cows, Beltrametti, & al., 2018). Users and systems, with prompt engineering, follow the rhetorical process shaped by the interfaces (Qian, 2023; Suchman, 1987). This new digital media encourages different forms of clarity and concision and promotes dialogic communication, question-and-answer, and, as has been said, the medium silently educates users in the new digital rhetoric ways, which are learning prompting, system reasoning, rather than in terms of a single, linear speech or text (McLuhan, 1964).

Moreover, media history to non-verbal and paralinguistic communication is related to McLuhan's theory (Kress, 2010). In human communication, body language, gestures, and tone shape persuasion beyond the content; similarly, in AI-human dialogue, the medium is the main part of the interface, and conversational and generative style play a role as an analogy to non-verbal cues. The system of visual layout of responses, the suggested prompting, and the turn-taking function as a paralinguistic that influences the perception of users' authority, credibility, and engagement (Burgoon, Guerrero, & Floyd, 2016). Finally, digital rhetoric and media theory provide a connection between rhetorical and contemporary practices of interacting with Large Language

Models as persuasive and co-creative partners (Cornelissen, 2005). These theoretical perspectives have gained meaning when they are applied to LLMs, where differences exist practically in interface design and rhetorical cues.

For innovation discourse, creativity, disruption, and technological progress are shaped by the utilities of digital media and AI tools. Innovative language is not only used within digital environments but also makes the digital rhetoric central for understanding the language of innovation and "innovation of language" in the 21st century (Castells, 2010).

In line with the framework above, uniting theory with practice after comparing ChatGPT and Copilot responses confirms McLuhan's assertion that "the medium is the message," emphasizing that communication technologies play a strong role in shaping meaning production rather than transmitting it only (1964). Despite the use of identical prompts, the two systems generated distinct rhetorical styles. Specifically, ChatGPT had a narrative clarity, segmented structure, and a humanized tone. On the other hand, Copilot produced a citation-oriented text and more academically rigid responses. These characteristics indicate that each digital environment mediates communication differently due to the internal data and rhetorical norms, interfaces, and affordances, which give emphasis to the role of platforms in shaping the communication (Zappen, 2005).

The practical findings demonstrate that innovation is shaped not only by the linguistic input, but at the same time by the technological medium in which it is articulated. The interactive prompt response reflects McLuhan's claims that the medium reshapes cognitive habits by training users in specific rhetorical practices such as concision, syntactic precision, and goal orientation (1964). Through the research, it is observed that the LLMs' adaptability to different rhetorical personas, such as academic or CEO, demonstrates how AI-mediated communication is deeply connected with interface design and algorithms (Bolter & Grusin, 1999). In conclusion, digital rhetoric is not only a part of research about persuasion online, but it's a framework of understanding how LLMs work, filter information, organize, and legitimize innovative meanings in today's digital ecosystems (Hayles, 2012).

## 2.5 Meaning in Innovation Discourse

Pragmatics focuses on the meaning that is shaped by the context, intention, and use, while rhetorical aspects, communication theories, and linguistics are still very important (Levinson, 1983). The pragmatics examines how the speakers use the words, how they perform actions such as requesting, promising, criticizing, and proposing, and how listeners interpret these actions by drawing on shared knowledge, norms, and situations (Austin, 1962). As an example, a phrase can be interpreted as a promise, a

marketing slogan, or a strategic decision, but it depends on who says it, to whom, and in what context (Grice, 1975).

In innovation, pragmatic factors can define if a new idea is evaluated as credible, relevant, and feasible (Suchman, 1987). For example, pitching an idea or framing a problem is more relational and strategic than simply informational (Cornelissen, Sensemaking under pressure, 2012). They position speakers in relation to their audiences, either real or digital, and negotiate roles, for example, experts, pioneers, collaborators, or challengers. Pragmatics has different dimensions, like politeness and facework, which can contribute to the acceptance or rejection of proposals (Ting-Toomey, 1999). For instance, a very aggressive proposal may seem unrealistic, and in environments, being overly cautious can be considered a failure.

As a new addition to the pragmatics comes the LLMs, which operate in a hybrid context, where the speaker is a statistical model, but the responsibility is on the user (Floridi, Cowls, Beltrametti, & al., 2018). Specifically, prompts implicitly define the communicative situation "act or be a consultant, a CEO, a professor, a student," and the model tailors its responses to these roles that have been given (Qian, 2023; Suchman, 1987). So, pragmatic cues are encoded in meta-instructions rather than arising from physical context or historical data. The same prompt about innovation can differ depending on whether the model is instructed to be a CEO, which means more skeptical, for instance.

Furthermore, pragmatics "communicates" with innovation through frames and context. How a problem is framed, for instance, "social challenge" shapes which are the possible solutions and which stakeholders are involved. Innovation language often uses phrases such as "potential impact", boosters, and evaluative expressions to position the new ideas from a range of conservative to disruptive (Hyland, 2005). These marks guide how people interpret and act as a signal of alignment with values, for example, efficiency, sustainability, or inclusivity.

LLMs can reshape pragmatics by formulations, summaries, and alternative frames (Kress, 2010; Floridi, Cowls, Beltrametti, & al., 2018). Though they may miss contextual cues such as institutional historical data or tensions, which are the main concepts in the pragmatic world. These tensions are important as human pragmatics can hide more meanings, and when it's used should be evaluated not only the facts to be corrected but also the situation, tone, and implications of AI-generated language.

In an innovation context, pragmatics is a key lens for understanding how language constructs possibilities (Κράτηση\_θέσης1). It shows that innovation is not only about novel ideas but also about how to perform these ideas in different contexts (Austin, 1962). Combine them with rhetorical, communicative, and cognitive perspectives, and pragmatics can complete the theoretical framework by emphasizing the meaning that innovation is not made by words themselves (Cornelissen, Sensemaking under pressure., 2012). Instead, it is a combination of linguistic form, social environments, and interaction from LLMs. These principles become visible when we speak about

interactions with LLMs, specifically when prompt formulation functions as a context act.

Summing up, the practical comparisons (Chapter 3) illustrate the pragmatic nature of meaning and making while interacting with LLMs. The same question gave different results depending on the contextual cues that were in the prompt, such as "answer academically," "answer as a CEO," or "provide a practical reflection." This difference confirms that speech acts, role assignment, and context play a role in shaping the interpretation of user intent and consistency in the pragmatic theory (Searle, 1969; Austin, 1962). Intention, implicature, and role negotiation thus become essential for understanding LLM-generated content that varies across similar communicative situations (Grice, 1975).

The outputs below demonstrate that LLMs rely on contextual markers to give an answer based on communication, formality, authority, and emotional tone. This observation aligns with the argumentation of Levinson (1983), it's not all about linguistic forms alone, but it's the interaction between language and social context. By interpreting prompts as context-setting acts, the LLMs negotiate the relationship between the speaker, which in our case is the user, and the addressee, which is the LLMs, and they adapt accordingly (Clark, 1996). In conclusion, pragmatics has a central role in understanding innovation discourses in LLM concepts, where users shape the informational content and the register, perspective, and interpretative side with which innovation is articulated.

## 2.6 Large Language Models and Meta-communication

Mentioning Large Language Models (LLMs) such as GPT systems represents a more qualitative approach in communication, as they are trained on human-generated text, and they function with probabilities that are based on the language patterns that they learned from data (Bender, Gebru, McMillan-Major, & Shmitchell, 2021). Theoretically, these LLMs can be conceptualized as meta-communicative systems, which means that the models are part of communication, and they can reflect, reconfigure, and redefine the rules by which communication occurs (Floridi, Cowls, Beltrametti, & al., 2018; Suchman, 1987).

Seeing from the communication theory perspective, LLMs function as tools for the prompt generation, but at the same time as structured communication systems. They operate based on communication models that include encoding, decoding, feedback, and noise (Shannon & Weaver, 1949). The prompt is a mechanism that allows communication and the generated content to construct meaning (human and machine). This perspective aligns with the LLMs framework as a communicative infrastructure rather than a technological tool. The interaction pattern that changes the classic way of communication and the feedback process creates another section to the communication models, as it gives a computational approach. The theoretical approach is essential for

understanding the meaning in innovative contexts, especially when the meaning is produced, negotiated, and stabilized by humans and LLMs.

Moreover, about LLMs, we have three layers: there is the user's prompt, which encodes the intentions, assumptions, and expectations (Grice, 1975; Qian, 2023). The internal representation that transforms the prompting into a structured space that continues, and the generated output, which comes into the human discourse as advice, explanation, narrative, or concept (Floridi, Cowls, Beltrametti, & al., 2018).

These processes aren't neutral, but the user learns the formulations and adapts their prompting strategies accordingly (Suchman, 1987). By this technique, prompting engineering becomes a practical form of meta-communication as users are not only writing to the system, but also provide information on how the system should work and respond to them, for example, "Think like a professor, or you are a high-performance athlete...", also, they give instructions such as "think academically or like CEO" (Grice, 1975). All these are meta-communicative tools that shape the rhetorical form and structure of AI answers (Cornelissen, Sensemaking under pressure, 2012).

Taking into consideration the communication theory, LLM interaction between humans and tools, they mix with no boundaries the sender, channel, and receiver (Shannon & Weaver, 1949). The system can rephrase, summarize, translate, and transform the messages, which means that the communication provides a new way of mediation, so users can interact with the model, allowing them to process or change, or reframe the content for audiences, expertise levels, and cultural contexts (Floridi, Cowls, Beltrametti, & al., 2018; Kress, 2010). Lastly, the models we use take a role such as editor, tutor, or consultant, but the knowledge is statistical and emergent.

In innovation concepts, LLMs participate in several stages of innovation discourses, such as idea generation, problem framing, exploration, and documentation (Nonaka & Takeuchi, 1995). This helps with managing the innovation challenges, proposing alternative metaphors and narratives. So, the role is double; on one side, there are constraints by data history, and they may reproduce narratives and potentially limit the innovation itself (Bender, Gebru, McMillan-Major, & Shmitchell, 2021).

Meta-communication is relevant because users reflect and discuss the interaction between them and the LLMs, for example, "What question will bring the outcome I want?" (Watzlawick, Beavin, & Jackson, 1967; Suchman, 1987). These layers turn the LLM use into a site where the communication practices are negotiated and redesigned (Fairclough, 1995; Cornelissen, Sensemaking under pressure, 2012). The language that includes the instructions, corrections, and constraints becomes, in the end, as important as the context itself when we speak about innovation. In conclusion, LLMs are not only tools that produce text but also agents with a broader discourse knowledge that can shape how people think about meaning, explanation, and problem-solving (Floridi, Cowls, Beltrametti, & al., 2018).

Finally, prompt engineering in this context is a technical but at the same time, a rhetorical practice (Grice, 1975). Firstly, it is technical because it requires an

understanding of how models respond to structure and constraints, while it is rhetorical because it includes strategic decisions about tone, stance, audience, and communicative aim. Innovation itself emerges from LLMs, and it's directly linked to the meta-communicative competence of users creating prompting (Nonaka & Takeuchi, 1995; Cornelissen, *Beyond Compare: Metaphor in Organization Theory*, 2005). These observations can come together through the meta-communication mechanism in LLMs' interaction between humans and machines.

Summing up, the side-by-side comparisons of LLMs' outputs in the practical section show that prompting is meta-communication, and also about how communication takes place. The instructions, such as "act as an expert," "speak as a founder," or "answer extensively," work as meta-communicative cues that create rules, tone, structure, and reasoning style. This supports theoretical perspectives that conceptualize LLMs as different levels of communication systems across both informational and meta-instructional levels (Floridi, Cowls, Beltrametti, & al., 2018).

The consistency of the adaptation of LLMs in their outputs across different role-based prompts confirms that meta-communication is the main mechanism for leading AI behavior. Moreover, the refinement of prompts in the practical analysis, in which the users adjust instructions based on previous outputs, reflects a co-creative process of meaning negotiation between human and machine (Hutchins, 1995). In conclusion, the findings reinforce the argument that prompting is not only a technical input mechanism, but it's also a proven rhetorical and communicative practice that actively shapes how innovative knowledge is produced, structured, and evaluated in the LLMs discourse (Seaver, 2017).

## 2.7 Innovation Theory & Language of Innovation

Entering innovation, innovative processes have been applied to the economic, technological, and managerial sectors, often emphasizing the material outputs, for example, products, processes, or structures. Although nowadays innovation is a socially constructed and communicatively mediated phenomenon, in which language plays a constructive role in shaping the novelty concept, legitimacy, and enactment (Fagerberg, 2005; Godin, 2008). Innovation is a discourse that exists collectively through linguistic practices that enable ideas, values, actions, and manage uncertainty. This chapter will examine classical and contemporary innovation theories with insights from communication, discourse, and digital media studies. Innovation eventually is a linguistic, cognitive, and technological process that grows in environments with digital convergence and AI practices.

### 2.7.1 Innovation Discourse and Economic Foundations

Innovation is fundamentally based on processes that include new ideas, which are transformed into value. Innovation through economic theory is a primary engine of economic development, productivity growth, and competitive advantage. Innovation is not just an invention but a successful application and spreading within the systems (Fagerberg, 2005)

If we wanted to clear the definition of innovation theory between invention and innovation, we would say that invention refers to the creation of new ideas or technologies; on the other hand, innovation involves their implementation, adoption, and integration into the social and economic structures. (Schumpeter, *The Theory of Economic Development*, 1934). So, an idea must be articulated, interpreted, and accepted by others to be considered innovation, as without shared understanding, novelty doesn't produce value.

Joseph Schumpeter's theory of economic development stands on top of the classical innovative theories. Specifically, in this theory, innovation is conceptualized as a process of creative destruction, in which the new information disrupts the existing market structures. This new information includes new products, new methods of production, new markets, new supplies, and new forms of organizing the information. Finally, it is mentioned by the same theorist that the most important role of the entrepreneur is the recognition of opportunities and the realization of them, which brings the communication side into innovation.

Classic economic theories often appear more in the technological dimension; they rely on linguistic categorization and symbolic framing. Concepts that are mentioned above, such as novelty, efficiency, progress, and value, are not only technical but also socially negotiated meanings that vary across historical and institutional contexts (Godin, 2008). Innovation, therefore, is something that we must name, describe, and prove through discourse.

Moving closer to contemporary theories, we find more intense reinforcement of ideas and knowledge. The attention is shifted to the knowledge as drivers (users) search for long-term growth (Romer, 1990). Knowledge, unlike physical goods, must be coded and communicated; otherwise, it will not be circulated. Based on the argument of Cowan, David, and Foray (2000), the economic value of something depends on its representation, classification, and transferability.

Like this, innovation is not only something technological but has its roots in language and linguistics. Economic actors must describe problems, find solutions, and create the same expectations about the value. Markets themselves are communicative systems with signals, narratives, and classifications that guide decision-making (Beckert, 2016). Innovation comes when new meanings are stabilized in the systems.

Finally, classic theories about innovation have three main principles that are directly connected with this research. Firstly, innovation is different from invention and

requires social adoption. Second, innovation is created by ideas and knowledge, and not so much from material resources. And third, the transformation of ideas into economic value depends on what is said above on different sectors, such as linguistic, articulation, interpretation, and coordination. These provide a framework that we will explore in a section of the rest of the research, such as cognitive or technological mediated processes.

Organizational and sociological perspectives give new concepts into innovation as a discursive and narrative process. So, innovation does not emerge only through invention but also through communicative practice that offers legitimacy, mobilizes resources, and aligns with the stakeholders (Garud, Dunbar, & Bartel, 2011; Lounsbury & Glynn, 2001).

Innovation includes narrative, and it's a very important part in framing the uncertain futures. For example, entrepreneurs, managers, and policymakers rely on storytelling to explain the risk, to persuade the audience, and to create the vision. These narratives often draw on cultural metaphors like journeys, ecosystems, revolutions, or breakthroughs that shape the innovation in how it is understood and evaluated (Cornelissen, 2005; Lakoff & Johnson, *Metaphors We Live By.*, 1980)

Apart from this, language also functions as a manager of ambiguity, as uncertainty is part of innovation, and discourse provides interpretive stability by categorizing problems, categories, and expectations (Beckert, 2016). By saying this above, we understand that innovation is a rhetorical accomplishment where meaning comes before physical implementation.

### 2.7.2 Innovation Narrative and Innovation Management as a Discursive Process

Modern innovation management frameworks acknowledge the important role of communication and language as part of the innovation processes. Models such as open innovation (Chesbrough, 2003), user-driven innovation (von Hippel, 2005), and design thinking (Brown, 2009) give emphasis to collaboration, learning, and iterative sense-making.

Open innovation specifically depends on the ability to exchange and translate knowledge across organizations. Carlile (2004) supports that innovation across different domains requires the same frameworks that give the space to transfer, translate, and transform knowledge. These processes are based on linguistic science and rely on common ground.

At the same time, design thinking follows practices such as reframing problems, storytelling, and communication. Teams that work on innovation are encouraged to articulate between narratives and prototypes that support a common understanding and creative recombination, as said by Verganti (2009).

Tidd and Bessant (2020) conceptualize innovation as a system of capabilities that has technological integration, market, and organizational changes. The ability to communicate effectively under different conditions is also important, as innovation competence is not only technical but at the same time is discursive, strategic, especially in language environments, to coordinate action and sustain changes.

Specifically, digitalization has transformed innovation as it reshapes the communication infrastructures. Digital platforms enable the combination of ideas, collaborations, and experimentation that accelerates innovation cycles (Yoo, Henfridsson, & Lyytinen, 2010). Digital innovation is generative, which means that digital artifacts invite ongoing interpretation and configurations (Nambisan, Lyytinen, Majchrzak, & Song, 2017).

In digital environments, innovation discourse becomes increasingly multimodal, as it includes text, integration, images, interfaces, and algorithms. Communication is no longer limited to what it was until now, but this has changed, and now communication is possible even between humans and LLMs, which structures how meaning is produced and circulated (Orlikowski & Scott, 2015).

This change in communication shows us the importance of language in innovation. Interface labels, platform narratives, metadata, and algorithmic classifications shape how the ideas are discovered, evaluated, and scaled. In conclusion, innovation includes communicative environments in which it unfolds.

### 2.7.3 Innovation with Large Language Models

Moving forward to Large Language Models (LLMs), innovation is operating directly on language as input and output. Apart from the traditional digital tools, LLMs generate novel combinations of symbolic content that are based on discourse with humans (Bender, Gebru, McMillan-Major, & Shmitchell, 2021)

Furthermore, innovation and specifically LLMs function as cognitive agents as they support ideation, narratives, and cross-domain knowledge combination to achieve successful innovative processes. The outputs reflect cultural and linguistic patterns, positioning as mirrors and amplifiers of dominant innovation discourses (Seaver, 2017).

Also, LLMs reshape innovation practices by focusing on how problems are defined. Interaction requires users to articulate their interaction only through prompts, which are language-based. This is considered a challenge to the traditional differential between tools and collaborators and redefines how creation and innovation are organized (Floridi, Cows, Beltrametti, & al., 2018).

Combining all the above, these perceptions suggest that conceptualized innovation is a linguistic-technological and cognitive system that emerges through articulation, interpretation, and materialization controlled by both human and technological actions.

At the same time, convergence plays a central role in this framework, and as they were separate domains, the language, technology, creativity, and organization, innovation now comes to integrate all these from communicative practices and to activate the translation, framing, and coordination. (Tidd & Bessant, 2020).

This perspective provides a theoretical foundation for understanding innovation practices, especially those that involve input and output messages (LLMs) (Liu, et al., 2023). Finally, language is not a medium but a mechanism through which innovation is produced and negotiated, and there is stability (Austin, 1962; Lakoff & Johnson, *Metaphors We Live By*, 1980).

Moreover, current discussions around the LLMs bring up new questions about whether AI systems have reasoning or simulate reasoning through probabilistic linguistic prediction. Apple's research team, in *The Illusion of Thinking*, showcases that contemporary reasoning models are vulnerable to not relevant semantic information and context. Their research revealed that models frequently fail to distinguish the important from non-important data within the prompts; as a result, LLM behavior relies more on statistical language associations than cognitive reasoning processes. This limitation is important information for AI-mediated communication, where the prompt formulation, rhetorical, and semantic structure influence the construction of AI-generated meaning. As a result, human cognitive interventions remain the main concept in interpreting, guiding, and evaluating communication with AI systems (Apple, 2024)

Summing up, the practical outputs from image-generation results to academic and CEO textual comparisons that show how established innovation theory materializes in LLMs, and the output interpretations. Some of the main concepts, like ecosystems, organizational roles, capabilities, digital transformation, tools, open innovation, and culture, are obvious across the practical findings, which reflect a deeper integration of these frameworks into the human and LLMs' conceptualizations of innovation (Tidd & Bessant, 2020). When prompts are focused on tools and processes, the result is visuals that emphasize gears, construction elements, and structured workflows. On the other hand, when focusing on vision and strategy, the images incorporate eyeglasses, directional symbols, and abstract representations of foresight. In the same way, prompts that are related to skills generate outputs that focus on adaptability, collaboration, and experimentation, which are key elements of innovation.

By this observation, we understand that these patterns align with foundational theories of innovation, including open innovation (Chesbrough, 2003), dynamic capabilities (Teece, Pisano, & Shuen, 1997), organizational culture (Schein, 2010), and design-driven innovation (Verganti, 2009). Moreover, the diversity from academic to CEO responses shows the distinction between theoretical abstraction and managerial practice, illustrating how innovation frameworks are interpreted into action in organizational contexts. This convergence between theory and LLMs generated discourse shows that LLMs are the carriers and reconfigurations of innovation that offer a novel way to examine the knowledge that is codified, communicated, and adapted across different communities (Christensen, 1997).

## 2.8 Prompt Engineering as a Linguistic, Cognitive, and Innovation Practice

Prompt engineering is a central practice in contemporary human and LLMs interaction. It refers to the strategic formulation of input messages in everyday language to help guide, constrain, and shape the outputs that are produced by generative AI systems. While traditional programming relies on formal code and specific instructions, prompt engineering operates through linguistics, so language is an operative mechanism of control and creativity (Liu, et al., 2023; Reynolds & McDonell, 2021)

From a theoretical perspective, prompt engineering represents a significant shift in how innovation is enacted. Rather than modifying underlying technical architectures, users influence system behavior through communicative interaction (see Chapter 2.1). This transformation foregrounds language as a site of innovation, where meaning-making, problem framing, and experimentation occur through iterative exchanges between human intent and machine interpretation.

Turchin's cybernetic approach offers to the research a foundational perspective on the epistemological role of language in communication. Specifically, the scientific activity is the production and the manipulation of symbolic systems, which are presented by words and symbols that emerge through evolutionary processes, so what we understand is that language is not a passive medium, but it is an active one that represents realism and knowledge. The emphasis is given in the function of language as a continuation of cognitive processes, communication, and scientific reasoning. Like this, we see that language being formalized supports transmission, validation, and accumulation of knowledge in different contexts. In conclusion, based on the information above, language is central to epistemology, shapes scientific concepts that are constructed, interpreted, and communicated, while it is a dynamic and evolved system in human cognition and in technological environments (Turchin, 1977).

From a theoretical standpoint, prompting is changing how innovation is enabled. Users influence the system behavior through the prompting rather than the modification of technical architectures. This transformation shows that language can be innovative, with meaning-making, problem framing, and experimentation occurring through iterative exchanges between human and machine interpretation.

From a linguistic perspective, prompting functions as performative and pragmatic acts. They shape the behavior by assigning roles, specifying constraints, and contextual expectations. This can align with the act theory that is mentioned by Austin and Searle (1962; Searle, 1969), which conceptualizes language as action rather than passive representation.

Prompting relies on pragmatic principles such as framing, implicature, and context. Users often use assumptions, goals, and evaluation criteria implicitly within prompts, expecting the system to understand their meanings. The research demonstrates that variations in words, tone, and structure can affect the outputs, which shows the

sensitivity of LLMs to the linguistic inputs (White, et al., 2023). So, prompt engineering can be understood as a form of applied pragmatics, where communicative competence affects the outcomes. And language doesn't just transmit instructions but configures the operating system.

Furthermore, prompt engineering externalizes the cognitive processes, which means that users must explain their intentions, mental models, and problem-solving strategies into language. This process is explained by the theories of distributed and extended cognition, which support the idea that thinking is distributed across different tools, symbols, and artifacts (Hutchins, 1995; Clark A., 2008). The nature of prompting, where the user refines the inputs based on outputs, is creating a loop of feedback, such as dialogic reasoning. On the other hand, cognition is constructed between human and machine, so the prompt that is mentioned above serves as a cognitive tool that structures, explores, and evaluates. In conclusion, by framing the problems, prompt engineering focuses on problem formulation instead of solutions, and this shift aligns with the innovative research because it gives emphasis on problem refinement and outcomes (Verganti, 2009).

As mentioned above, prompt engineering is an innovative practice that creates space for experimentation, low-cost prototyping, and cross-domain combinations. The lower barriers in technology can give new access, more capabilities, and allow innovation to emerge, even with a more linguistic perspective than one closer to programming (Tidd & Bessant, 2020). According to Liu et al. (2023), natural language processing shows that prompting functions as a mechanism that can structure reasoning strategies and evaluate criteria, and encode tasks. By this, we understand that prompt engineering can function as a form of innovation that is based on interaction, and the valuable part is the communication intention with algorithmic inference. Moreover, prompt engineering uses prompt patterns, which means that they are reusable, innovative practices. These patterns have the function of boundary objects between human cognition and machine processing, which activate repetitions and innovative frameworks that flow (White, et al., 2023). In conclusion, prompt engineering has three main capabilities in one single practice, such as linguistic competence, cognition, and technological capability. Like this, innovation comes from the combination and coordination of meaning across humans and LLMs.

Although we should mention that prompt engineering carries ethical and societal implications. Specifically, prompts are influenced in their outputs as they shape the knowledge, how it is presented, and decision-making. According to UNESCO (2021), the responsibility of human actors in AI communication lies especially with respect to transparency, inclusion, and linguistic diversity. From this point of view, the way that the problems are framed and instructed can reinforce or challenge biases from the training data. Finally, responsible innovation means to exist awareness of linguistic choices as they guide the LLMs.

Prompting can be understood as not only technical but also linguistic, cognitive, and innovative practice. In innovation, concepts can transform the language functions as a mechanism that ideas are generated, negotiated, and stabilized. All the above can provide a theoretical foundation to understand the contemporary innovation practices, as they

involve input-output communication through LLMs, and language is not just a medium but a mechanism of innovation.

Summing up, the practical component of this thesis functions as a demonstration of prompt engineering in action (see Chapter 4.2). In this context, the researcher used the original input to modify and provide prompting devices to guide or orient the AI responses. For example, variations in prompt structure, such as identity-based or context-rich instructions, illustrate how linguistic precision and structural clarity influence the interpretations. The diversity in observations between outputs that are generated under different instructions shows that prompt engineering operates simultaneously as cognitive and rhetorical digital media that enables users to shape the conceptual frames of LLMs that construct meaning (see Chapter 3.2) (Reynolds & McDonell, 2021).

From the practical findings, we understand that effective prompting brings argument construction, as the user has to be specific, define the role, constrain the scope, and provide cues in order to guide the model’s reasoning process (Liu, et al., 2023). Furthermore, the iterative refinement of prompts shows the innovation cycle itself, which is testing, learning, adjusting, and retesting something that is considered to emphasize the adaptive nature of prompt engineering. This is emphasized in prompt literacy as a key competence for meaningful human and AI collaboration (see Chapter 4.1) (White, et al., 2023). From an ethical and educational perspective, the findings of the research also align with UNESCO’s (2021) frame of prompt engineering as a core digital literacy skill, which gives emphasis to innovative processes that combine language, cognition, and technical mediation.

### 3. When ChatGPT and Copilot React to Prompts

#### 3.1 Experimenting with Innovation Literature

For experimental material, the book by Krasadakis, "60 Leaders on Innovation" (2021) was used, specifically is a practitioner-oriented publication that combines insights, reflections, and principles on innovation that are used by leaders of diverse organizational and industry contexts. The book offers a structured collection of innovation matters, questions, and narratives that show how innovation is discussed and framed in practice. The dialogic experiments are informed by executives in the C-Suite role (like "Chief Innovation Officers"), which serve as a conceptual and contextual reference point for exploring real-world innovation discourse. In this thesis, the book is not a theoretical source like the ones used above, but in a conventional way, which means that it is used as an experimental instrument for the generation and analysis of textual and visual data that comes from LLMs. The values of this book consist of rich, innovative language, with a practitioner orientation as mentioned above, and taking into consideration the questions, they are used as hooks for prompt engineering. It is structured with the instrument of 22 questions, to which CEOs and CIOs respond. In parallel, the study engages both classical and contemporary theoretical models, including Aristotle's rhetorical triad, Toulmin's model of argumentation, Shannon and Weaver's communication model and information theory extensions, and McLuhan's media ecology and its role (with technology) in shaping human consciousness and culture.

The selection of this book is due to the innovative discourse that has been practiced by innovators, rather than how it is theoretically supported. This book is suitable for an experiment that examines the innovation meaning emergence, through the language interaction with AI systems. Finally, the ideas and formulations by the innovators were transformed into prompts, showing how the AI systems are innovatively interpreted, framed, and produced under specific contexts and communicative conditions that we will examine below.

Terminologically, in Krasadakis work, "The Innovation Mode" is used in a limited way, specifically is not the primary theoretical source, but it's a terminological reference point. The contribution of the book is in innovative language-related matters, and there are categories that help organize certain concepts that are used in prompt engineering and comparative analysis. The innovation toolkit is selected to support consistency in terminology and the interpretation of innovation matters, without being influenced by the theoretical framework or the outcomes of the analysis.

#### AI Textuality and I-Textuality in Human-AI Interaction

To approach the generated AI output, this research adopts the concept of I-textuality, as is also mentioned by Tang (2025). Specifically, going beyond the classical notions of intertextuality, which means that a text derives its meaning from the relationship between other texts, rather than being isolated (Kristeva, 1980), I-textuality concepts AI-generated text as interacting that emerges through dynamic relationships between human and machine as it creates textual patterns embedded within the LLM-generated outputs. So, the AI

outputs are not something autonomous, but it is a co-constructed artifact created by the prompt, context, and combined from the prior discourse.

Methodologically, this approach gives a theoretical reason for using the outputs of the LLMs' text and visuals as analyzable communicative artifacts. According to Tang (2025), the LLMs function as intertextual mediators, as they get information from prior discourse while at the same time being constrained and directed by human prompt engineering. So, meaning is not transmitted in a linear way from the user to the system, but is iterative through negotiation, and it's part of the linguistic perspective, rhetoric, and context that play an important role in shaping the output.

In this study, the concept of AI textuality is applied not only to the prompt outputs but also to the interpretation of the visuals, which are also influenced by the linguistic framework. Prompts and hooks operate as intertextual mediators that drive the generation process and change how innovation is conceptualized, structured, and narrated. By using I-textuality as an analytical tool, the methodology takes into consideration the relation and context, providing a theoretical foundation for comparative analysis of text and visuals, as we see in Chapter 3.2.

### 3.2 Hooks and AI-Generated Imaging

In this chapter, we aimed to identify the differences in AI-generated images that are produced in response to the original questions from Krasadakis' book (2021). Secondly, we incorporated information from the book that is mentioned above to develop hooks, which are used to generate a set of images that are provided below. Finally, the images are generated from the original prompts that are compared with those produced using hooks to consider the impact of prompting on visual representations. The selection of the Krasadakis' questions was conducted randomly.

To extract each of the figures below, a prompt is used, plus the question that is extracted from the book "60 Leaders of Innovation" (Krasadakis G., 2021), and in a second trial, the "hook" that is created by the author.

Moreover, to define what a hook is, a hook is a rhetorical and communicative tool to capture attention, guide the audience, and give space for interpretation from the outset of one message. This happens through persuasion and strategic communication. Hooks are context-setting cues that provoke curiosity and influence how the information is interpreted and evaluated (Heath & Heath, 2007). Not only does it attract attention, but an effective hook structure also shapes expectations and guides the focus to subjects, values, or outcomes.

Prompt that was used in all questions: **Create an image based on this question (...).**

A. Components of Innovation

**Question from the book:** What makes a company innovative?



Figure 3.A1

This image has a central lamp that symbolizes innovation, and around it is 4 main concepts, which are the innovation culture, clear vision, skilled employees, and willingness to take risks. This focus on the internal human and social parameters of innovation gives a general sense of the structure of innovation. There is an innovation model that gives emphasis on collaboration. The idea of innovation is the result of an ecosystem with people, culture, risk, and vision. As Tidd & Bessant (2020) mention, innovation thrives within ecosystems that include not just internal talent but networks.

**Hook:** Using the latest technology, can a company become innovative?



Figure 3.A2

This image has a man, a professional dressed in a suit, who looks skeptical about one lamp, and related to that lamp, there is a microchip, a robot, and symbols of technology. Shows the result of a technological mindset and tool, strategic thinking, and planning. Shows a model that focuses on the atomic and technological aspects of innovation. The idea is that technology with AI, robotics, and automation can activate innovation

through atomic thinking. Also, although technologies are powerful, they aren't sufficient without the human approach, something that is also discussed in the Harvard Business School Press by Chesbrough (2003).

## B. Roles and Skills

**Question from the book:** What are the essential roles and skills in an innovative environment?



*Figure 3.B1*

This image has a blue-toned background with the question included and circular icons that represent essential roles and skills, such as visionary, collaborator, experimentation, and adaptability. Each of these visualizes flexibility and complexity, providing a structured overview of the dimensions of innovation. The idea is that innovation comes from cognitive, social, and technical skills and supports a non-linear, dynamic view of innovation, where different capabilities are activated. Innovation is not a linear process but a flexible and creative path, also mentioned by Verganti (2009), that innovation evolves and adapts.

**Hook:** Is success in innovation a single recipe with skills and roles?



Figure 3.B2

*This image* shows a notebook that is surrounded by kitchen utensils like spoons, knives, measuring tools, and a question. It’s a metaphor of cooking; innovation is framed as a creative process where the “ingredients,” which consist of skills and roles, must be combined each time. Each innovation effort demands a unique mixture, timing, and experimentation, which is supported by organizational culture and leadership in order to have a sustaining innovation over time (Schein, 2010).

### C. Tools

**Question from the book:** What are the essential tools for innovation?



Figure 3.C1

*This image* has the question placed on top of a notebook, with a lightbulb icon serving as the visual point. Surrounding it are objects like a wrench, screwdriver, gear, and pencil, which symbolize practicality and construction. There is a visual model that suggests innovation needs support here; tools are enablers. The light bulb signifies that the idea is primary, but it is the tools that help build and implement it. The message is exploratory; they aren’t just what tools are needed, but why they matter. As mentioned,

by Schein (2010), tools are effective and enable innovation, but only if there is a strategic vision, culture, and problem-solving alignment.

**Hook:** Is making a company innovative the result of tools?



Figure 3.C2

This image raises the question, and it's written on top of the book, but the lightbulb is absent due to the meaning of the question; we don't know for sure if the result comes from the tools. As mentioned previously, the tools alone may not be enough to have innovation; this creates a gap, perhaps culture, leadership, or vision are more essential (Schein, 2010). The model is questioning technological determinism and encourages deeper thinking about what really powers innovation. Enabling innovation to bring ideas to life is the purpose (Tidd & Bessant, 2020).

#### D. Digital Transformation

**Question from the book:** Digital Transformation – What is it all about?



Figure 3.D1

This image shows a notebook with the title on it, and it is surrounded by objects like a laptop, a screwdriver, a wrench, and gears. Presents a model that focuses on the means, such as systems, processes, and technologies. Digital transformation is visualized as a technical challenge. It reflects a hands-on, operations-based understanding of

transformation. The addition of other tools also emphasizes that technologies are part of the transformation, but not without other tools such as leadership and strategies (Schein, 2010).

**Hook:** The digital transformation comes out of the vision, and this is why.



Figure 3.D2

On the other hand, this image adds the word vision and includes eyewear as a symbol of perspective and foresight. We speak about strategic dimensions such as strategic transformation that doesn't start only from tools, but from intentional human work and direction. The eyeglasses suggest clarity of purpose. It's a model of transformation that begins with vision and purpose and then flows into the technical and operational. Innovation here is guided by leadership and insight, not just systems. Having a "clear" direction that will enable transformation with a combination of things (Tidd, 2020).

### E. Open Innovation

**Question from the book:** What is ‘open innovation’ and what is the value for the parties involved?



Figure 3.E1

This image focuses on a statement with icons such as a question mark, a target, and eyeglasses. Supports a design-thinking model, which is a clarity of the problem that leads to relevant, meaningful innovation (Brown, 2009). Without defining the right problem, effort and creativity are wasted, as innovation is a result of focus, insight, and sharp problem framing.

**Hook:** The well-defined problems will play an important role in the innovation process, and this is why.



Figure 3.E2

This image centers on icons like a light bulb, ampersand, pencil, and eyeglasses. An innovation model that values co-creation and sharing ideas, the ampersand symbolizes connection and synergy. Innovation emerges through collaboration between companies, universities, customers, etc. It is a visual representation of the open innovation philosophy, where knowledge flows in and out across boundaries, creating adaptation and responsive innovation ecosystems (Chesbrough, 2003).

### 3.3 Comparison Copilot & ChatGPT

Dimensions	ChatGPT	Copilot	Comments
<b>Structure</b>	Clear responses, shorter sections, and conversational outputs.	Formal responses, academic report structure, and style of writing	<b>Their differences affect how authoritative or accessible the responses to the user are.</b>
<b>Language</b>	Language is more narrative, like storytelling, and explains business or academic perspective.	Language is more formal, technical, and neutral across the different perspectives.	<b>This change in communicative styles shows different default settings in each LLM.</b>
<b>References</b>	References are fewer, and they rely on general knowledge and examples.	References are more frequent and have academic sources.	<b>Copilot is closer with academic sources, while we see that ChatGPT is more fluent.</b>
<b>innovation</b>	Innovation is obvious through storytelling, purpose, and humanized answers.	Innovation is obvious through structured concepts, models, and strategies.	<b>The systems produce different innovative discourses.</b>
<b>Perspective</b>	Adapts well with business and CEO perspectives.	Has a more consistent academic tone, even if there are perspective shifts.	<b>ChatGPT is more adaptable in role-based prompts.</b>
<b>Abstract ideas</b>	<b>There is a combination of abstract ideas with examples.</b>	<b>Works at a higher level of abstraction, especially with concepts.</b>	<b>Realistic and applicable influences for both parties.</b>

<b>Consistency</b>	Shows consistency based on the prompt frame and on the questions.	Shows better consistency across the questions.	Consistency versus adaptability comes as the main distinction.
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3. 1 Table: ChatGPT & Copilot comparison

### **Comparison of Copilot and ChatGPT:**

ChatGPT version has more structure and fewer academic references, and the context is separated under headings such as "Strategic Differentiation...". Uses broad company examples like Apple and Tesla. From the business perspective has rich and more intense humanized text to the founder's opinion and the theoretical models include Doblin, Shein, Teece, Keller, and Chesbrough.

On the other hand, Copilot has a formal and referenced text; the context is still separated by broader themes like "Strategic innovation...". Uses more academic material such as "MacMillan 1997..." and introduces concepts like ecosystem thinking, strategic partnerships, and brand storytelling, which aren't addressed as much as in the other version. From the business perspective, a more cohesive answer is given, and the examples that are used seem more realistic.

The answers of both ChatGPT and Copilot include "academic" and "business" points of view.

### 1. How Does an Innovative Company Differentiate?

#### **A1. An academic answer from ChatGPT:**

“Innovative companies differentiate themselves through a combination of value creation, strategic positioning, and organizational agility that allows them to disrupt existing markets or create entirely new ones. Differentiation is not merely a matter of product novelty; it involves rethinking customer experience, business models, and even industry norms.

##### A.Strategic Differentiation through Innovation

Michael Porter’s foundational theory on competitive advantage (1985) suggests firms can either compete on cost or differentiation. Innovative companies focus on the latter, often achieving "differentiation advantage" by offering unique value that customers perceive as superior. Examples include Apple’s user-centric design and Tesla’s integration of software into automotive experiences.

One powerful model to understand this is the Doblin Ten Types of Innovation framework, which broadens the definition of innovation beyond product. The framework outlines categories such as:

- A. Business Model Innovation (e.g., Netflix’s subscription model)
- B. Process Innovation (e.g., Toyota’s lean manufacturing)
- C. Customer Engagement (e.g., Nike’s custom shoes and communities)
- D. By innovating across multiple domains, companies build moats that are hard to replicate.
- E. Organizational Culture as a Differentiator

Culture plays a central role in innovative differentiation. Google, 3M, and IDEO are known for cultures that prioritize experimentation, psychological safety, and cross-functional collaboration. According to Edgar Schein’s model (2010), organizational culture stems from shared assumptions and values, which in innovative firms include risk tolerance, failure acceptance, and intrinsic motivation.

This cultural fabric encourages constant renewal and transformation, allowing firms to stay ahead of competitors. It supports “dynamic capabilities,” a concept from David Teece (1997) that refers to an organization’s ability to integrate, build, and reconfigure internal and external competencies in rapidly changing environments.

##### Technology and Ecosystem Leadership

Innovative firms often become platform leaders. Amazon, for example, didn't just build an e-commerce site; it constructed a technology stack (AWS), a logistics system, and a seller ecosystem. This systems-based innovation strategy allows for exponential differentiation by enabling others to innovate on their platform.

Additionally, companies that embrace open innovation (Chesbrough, 2003) can access and integrate external knowledge more effectively, differentiating themselves through collaboration and co-creation.

#### B.Brand and Emotional Differentiation

Strong innovation often leads to brand equity. According to Keller's Brand Equity Model (2003), innovative companies evoke deep customer resonance, which translates into loyalty and advocacy. Apple's "Think Different" campaign exemplifies how innovation contributes to emotional differentiation, turning products into symbols of identity and aspiration.

#### Conclusion

In sum, an innovative company differentiates by delivering unique, defensible, and evolving value through a blend of product, business model, process, and experience innovations. The foundation for this lies in strategy, culture, and capability development. Their differentiation is systemic and multi-dimensional, creating long-term competitive advantages that are hard to replicate. (OpenAI, 2025)"

#### ***B1. CEO's perspective answer from ChatGPT:***

“(Answered from the perspective of a successful business founder)

Innovation is not a buzzword—it's a survival strategy. In today's hyper-competitive markets, product features, pricing, or scale are no longer the sole differentiators. The most innovative companies stand apart not just because they offer something new, but because they solve problems in ways others haven't thought of. As a founder, I've seen firsthand that true differentiation through innovation begins with mindset, is driven by culture, and is sustained through systems that continually challenge the status quo.

#### A.Obsessive Customer Focus

First and foremost, innovative companies differentiate by being relentlessly customer-centric. They don't ask, "What can we build with our tech?" They ask, "What pain point can we eliminate entirely?" At our company, the core of every innovation starts with a deep understanding of customer friction—things that annoy, frustrate, confuse, or slow users down. From the beginning, we made it our mission to listen more than we talk, engage more than we pitch. That allowed us to develop features and services that our competitors hadn't even considered because they weren't paying attention to nuance.

Apple, for example, didn’t invent the smartphone—but they reimagined what it meant to interact with technology. That level of differentiation comes from rethinking the experience, not just the product.

#### B. Culture of Curiosity and Risk-Tolerance

Most companies say they support innovation, but very few build the muscle to sustain it. Differentiated innovators aren’t afraid to cannibalize their own products or disrupt their own processes. At my company, we established what we call “fail-friendly zones”—areas of our business where experimentation is not just allowed, it’s expected.

What this does is signal to the team: creativity is not just tolerated, it’s protected. Innovation doesn’t happen in high-stakes environments that punish missteps. Differentiation comes when you empower people to ask “why not?” instead of always answering “why?”

#### C. Speed and Agility

Speed is a critical differentiator. I’ve seen too many companies drown in analysis paralysis. The innovators who pull ahead are the ones who execute rapidly and iterate constantly. At our startup, we have an internal motto: “Launch ugly. Polish fast.” Perfection is the enemy of progress, especially in innovation.

You don’t differentiate by watching others act—you do so by acting before others even recognize the opportunity.

#### D. Unique Business Model Innovation

Innovation doesn’t always have to be product-based. Sometimes, the biggest differentiator comes from how a company makes money or delivers value. For instance, Netflix didn’t invent video streaming—they reinvented how customers accessed and paid for content.

In our company, we took a traditional B2B model and turned it into a subscription-based B2B2C model. That shift, although operationally complex, fundamentally changed our customer relationships and gave us a data-driven edge.

#### E. Cross-Pollination of Ideas

True differentiation often happens at the intersections—between industries, disciplines, and cultures. We encourage our teams to “steal like artists” from sectors completely unrelated to ours. Inspiration for one of our most successful features came from how video games onboard new players. Another came from a logistics solution used in urban farming.

Innovative companies don’t operate in silos. They look outward, absorb patterns, and remix them in novel ways.

#### F. Leveraging Emerging Tech Thoughtfully

An innovative company doesn't adopt tech for tech's sake. It carefully integrates AI, blockchain, IoT, and quantum computing, where they create real, differentiated values. At our firm, we used machine learning not to automate the entire product—but to enhance a small, high-friction interaction that led to a 26% increase in user retention. That's meaningful innovation.

Conclusion: Innovation as a Strategy, Not a Tactic

Ultimately, innovative companies differentiate themselves not by being flashy or lucky, but by building systems and cultures that consistently expect and enable innovation. Innovation becomes the norm, not the exception. It's woven into hiring practices, KPIs, customer service scripts, leadership training, and even how success is defined. It's not about being first, it's about being different in a way that deeply matters to your customer. (OpenAI, 2025)"

## ***A2. An academic perspective from Copilot:***

"1. How Does an Innovative Company Differentiate?"

Differentiation is a cornerstone of competitive strategy, and for innovative companies, it is both a goal and a byproduct of their innovation processes. An innovative company differentiates itself by creating unique value propositions that are difficult for competitors to replicate. This differentiation can occur across multiple dimensions—product, service, process, customer experience, and even business models.

### Differentiation Through the Consumption Chain

According to MacMillan and McGrath (1997), companies often focus narrowly on product features when attempting to differentiate. However, true innovation can occur at any point in the customer's experience, or what they term the "consumption chain." This includes everything from how customers become aware of a product to how they purchase, use, and dispose of it. By innovating across this entire chain, companies can uncover unique opportunities to stand out.

For example, Apple's differentiation is not just in its hardware but in its seamless ecosystem, intuitive user interfaces, and retail experience. Similarly, Amazon differentiates through logistics innovation, such as one-click purchasing and same-day delivery.

### Strategic Innovation and Competitive Advantage

A systematic literature review by Agazu and Kero (2024) emphasizes that innovation strategy is a key driver of firm competitiveness 2. Innovative companies often adopt a proactive approach to market changes, leveraging R&D, customer insights, and emerging technologies to stay ahead. This strategic orientation allows them to create

offerings that are valuable, rare, and difficult to imitate—core tenets of the Resource-Based View (RBV) of the firm.

For instance, Tesla's innovation is not limited to electric vehicles but extends to battery technology, autonomous driving software, and direct-to-consumer sales models. These innovations collectively create a differentiated market position.

1. Types of Innovation That Drive Differentiation
2. Innovative companies typically engage in several types of innovation:
3. Product Innovation: Creating new or improved products (e.g., Dyson's bladeless fans).
4. Process Innovation: Enhancing internal operations (e.g., Toyota's lean manufacturing).
5. Business Model Innovation: Changing how value is captured (e.g., Netflix's shift from DVD rentals to streaming).
6. Customer Experience Innovation: Redefining how customers interact with the brand (e.g., Airbnb's user-centric platform).
7. Each of these can serve as a basis for differentiation, especially when combined in novel ways.
8. Organizational Culture and Leadership

Culture plays a pivotal role in enabling innovation-based differentiation. Companies like Google and 3M foster cultures that encourage experimentation, tolerate failure, and reward creativity. Leadership commitment is also crucial. Leaders must champion innovation, allocate resources, and align incentives to support long-term differentiation strategies.

Moreover, cross-functional collaboration and decentralized decision-making often empower employees to contribute innovative ideas, further enhancing differentiation.

#### Leveraging Technology and Data

Digital technologies such as AI, IoT, and big data analytics enable companies to personalize offerings, optimize operations, and predict market trends. For example, Spotify uses machine learning to differentiate through hyper-personalized playlists and recommendations, creating a unique user experience that is hard to replicate.

#### Intellectual Property and Ecosystem Strategy

Protecting innovations through patents and building strategic partnerships can also reinforce differentiation. Companies like Qualcomm and ARM Holdings have built entire ecosystems around their IP, creating high barriers to entry for competitors.

#### Conclusion

In summary, an innovative company differentiates itself by embedding innovation into its strategy, operations, and culture. It looks beyond product features to the entire customer journey, leverages emerging technologies, and fosters a culture of continuous improvement. Differentiation is not a one-time achievement but a dynamic

capability that must evolve with market conditions and technological advancements. (OpenAI, 2025).”

## ***B2. CEO's perspective answer from Copilot:***

“1. How does an innovative company differentiate?

As a founder who has built a company from the ground up, I’ve learned that innovation isn’t just about having a novel idea; it’s about creating meaningful, sustainable differentiation in a world full of noise. Innovative companies don’t just compete; they redefine the playing field. They don’t just improve, they transform.

### **Purpose-Driven Innovation**

Differentiation starts with purpose. The most innovative companies are deeply mission-driven. They know exactly why they exist and what problems they’re solving. That clarity of purpose becomes a compass for innovation. In our case, we weren’t just building a product—we were trying to change how people interacted with technology in their daily lives. That mission gave us focus and inspired our team to think beyond incremental improvements.

### **Deep Customer Empathy**

Innovative companies differentiate by understanding their customers better than anyone else. They don’t just listen to what customers say, they observe what customers do, feel, and struggle with. We spent hours watching users interact with our product, identifying pain points they couldn’t articulate. That level of empathy allowed us to design solutions that felt intuitive and even magical.

### **Culture of Curiosity and Risk-Taking**

Culture is a massive differentiator. In our company, we built a culture where curiosity was celebrated, and failure wasn’t punished; it was studied. We encouraged people to ask, “what if?” and “why not?” We gave teams the freedom to experiment, and we protected time for exploration. That culture of psychological safety and creative freedom became a magnet for top talent and a breeding ground for breakthrough ideas.

### **Speed and Agility**

Speed is a form of innovation. The ability to test, learn, and iterate quickly is a competitive advantage. We adopted agile methodologies early on, not just in product development but across the organization. We ran experiments, gathered feedback, and pivoted fast. That agility allowed us to outmaneuver larger, slower competitors.

### **Strategic Use of Technology**

Technology is a tool—not the innovation itself. We used emerging technologies like AI and machine learning not because they were trendy, but because they helped us solve real problems in new ways. We constantly asked: “How can this technology create more value for our customers?” That mindset kept us grounded and focused on outcomes, not features.

### Brand and Storytelling

Differentiation isn’t just functional—it’s emotional. Innovative companies tell compelling stories that resonate with people. We invested in the brand early, not just in logos and colors, but in narrative. We told stories about our mission, our customers, and our journey. That emotional connection-built loyalty and advocacy that no feature list ever could.

### Ecosystem Thinking

We didn’t try to do everything ourselves. We built an ecosystem of partners, developers, and collaborators who extended our reach and enriched our offering. That openness to co-creation allowed us to move faster and tap into ideas we never would have developed alone.

### Conclusion: Innovation as a Way of Life

In the end, differentiation through innovation is not a one-time event; it’s a way of life. It’s about being relentlessly curious, deeply empathetic, and unafraid to challenge the status quo. It’s about building a culture where ideas can flourish and where execution is just as important as inspiration.

As a founder, I’ve learned that innovation isn’t just about being different; it’s about being meaningfully better. And when you get that right, you don’t just stand out, you lead. (OpenAI, 2025).”

## 3.4 Prompt Engineering Experiments: Academic vs Business Framing

This section examines how the diverse communicative frames, such as academic and business perspectives, can impact the AI-generated responses to innovation questions. Using the same prompts that are derived from “60 Leaders on Innovation”, the experiment has outputs that are under academic framing, while on the other hand, we have the ones that are under business or executive (CEO/CIO) perspective. This comparison doesn’t focus on factual accuracy but mainly on the differences in structure, tone, emphasis, and conceptual orientation. By this analysis, which includes identical questions, but different responses based on the framework, we can understand how innovation discourse is constructed differently in different contexts and how the prompting can be a mechanism for shaping meaning in human and AI interaction. Furthermore, follow the 22 questions that are taken from Krasadakis’s book (2021).

Analytically, the 22 questions were drawn from the book *60 Leaders on Innovation* by George Krasadakis and Robin Nessensohn (2021). The questions include:

1. How does an innovative company differentiate?
2. Do companies need a Chief Innovation Officer?
3. What is the C-Suite's role in facilitating innovation?
4. What are the major roles and capabilities in a truly innovative setting?
5. Start-up innovation – Diversified perception allows for smarter solutions?
6. How do you identify innovation opportunities?
7. Does corporate innovation require a methodology?
8. What are the main digital innovation tools?
9. How do you measure innovation output and impact?
10. How significant is culture for corporate innovation?
11. What are the most frequent innovation blockers?
12. How would you foster an experimentation mindset?
13. Do companies need an innovation community?
14. How does innovation fit with agile development?
15. How would you define the truly agile organization?
16. Do public sector companies innovate?
17. Digital Transformation – what is it all about?
18. What is Open Innovation?
19. Patent or don't patent? Do I need an IP strategy?
20. What are the top three technologies that will drive innovation?
21. How can innovation solve the world's greatest challenges?
22. What is the future of work?

This table outlines the prompt engineering framework used in the comparative analysis between academic and business perspectives by LLMs. Specifically, the prompt type, assigned role, and instruction to AI, question, and output requirements ensure methodological transparency. The table is a form of meta-communication, which allows observation of how the context and the role instructions shape rhetorical style, structure, and meaning in outputs. This structure enables comparison between the academic and business perspectives while extracting comparable outputs.

<b>Prompt</b>	<b>Role</b>	<b>Instruction to AI</b>	<b>Question</b>	<b>Output Requirements</b>
<b>Academic prompt</b>	Expert in the innovation field	You are an expert in the innovation field, and you are asked these questions. Please answer extensively and give academic responses that are based on facts.	What is the future of work?	For each question, an answer of <b>500–700 words</b> is required.
<b>Business (CEO) Prompt</b>	Founder of a company/ CEO	You are the founder of a company, and you are asked these questions. Please answer as a successful business founder.	What is the future of work?	For each question, an answer of <b>500–700 words</b> is required.

### 3.2 Comparison of Academic and Business (CEO) Prompt Structures

The following section compares AI outputs that are generated through academic and business perspectives. Shows how role-based instructions influence the framework, the language, and the communication style of the responses by the LLMs. Firstly, there is the question from Krasadakis' book as mentioned above. This is followed by an AI-generated summary based on the original AI-generated response that was generated by the prompting above (see Table 3.2). Finally, the academic and business responses are summarized in a table form to give emphasis on the differences in framing, emphasis, and rhetorical approach, which is followed by the conclusions and comparison.

### Question 1: How Does an Innovative Company Differentiate?

#### **ChatGPT response:**

##### Academic Output

“Innovative companies differentiate themselves through value creation, strategic positioning, and organizational agility. Drawing on Porter (1985), Doblin’s Ten Types of Innovation, and dynamic capabilities theory (Teece, 1997), differentiation emerges through product, business model, process, ecosystem, and brand innovation, supported by organizational culture and platform leadership (OpenAI, 2025).”

##### Business Output

“Innovation is not a buzzword—it’s a survival strategy. Differentiation comes from obsessive customer focus, a fail-friendly culture, speed, business model reinvention, cross-pollination of ideas, and the thoughtful use of emerging technologies. Innovation becomes a daily practice embedded in how the company operates (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Formal, analytical	Narrative, experimental
<b>Structure</b>	Theory-driven, structured	Story-driven, practice-oriented
<b>Focus</b>	Frameworks, models	decision-making
<b>Innovation view</b>	Systemic and multi-dimensional	Situational, agile, action-based
<b>Time</b>	Long-term strategic	Immediate, iterative
<b>Communication model</b>	Informational/linear	Interactive/pragmatic
<b>Style</b>	Impersonal, objective	Humanized, persuasive

#### *3.Q1 Dimensions in Question 1*

#### Conclusion

The academic answer has an analytical and theoretical perspective based on different frameworks, and has a structure with a combination of innovation (Anthony, 2017), while the CEO’s perspective has practical experience with leadership and entrepreneurship without references to frameworks. Focuses on mindset, culture, and

daily operational practices. Analytical mentions product, process, and business model innovation, culture and organizational capabilities, technology platforms and ecosystem leadership, and brand & customer. CEOs demonstrate innovation as situational, agile, and emphasize customer obsession, speed, risk-taking, business model innovation, cross-industry inspiration, and technological tools. Finally, the academic is multi-dimensional and presents a more long-term view; on the other hand, from the CEO's perspective, innovation is a daily routine and decision-making, and the text has a humanized touch in the speech compared to the academic one. About humanized touch, we reference Miao et al. (2018) that AI systems can resemble natural human communication, including emotion, intentions, and social awareness. Finally, this comparison demonstrates that prompting is a meta-communication, in which LLMs adopt different rhetorical styles, orientations, and meanings based on the communicative role, such as academic or business.

## Question 2: Do Companies Need a Chief Innovation Officer?

### LLM Outputs

#### Academic Output

“The Chief Innovation Officer (CINO) emerges as a strategic response to innovation complexity, enabling cross-functional coordination, innovation governance, and cultural alignment. Drawing on Capgemini & MIT (2012) and Anthony et al. (2017), the role supports hybrid innovation models that combine centralized direction with decentralized experimentation (OpenAI, 2025).”

#### Business Output

“At scale, if innovation is not someone’s job, it becomes no one’s job. A CIO provides ownership, bridges strategy and execution, builds experimentation systems, and aligns innovation with real customer needs. The value of the role lies less in the title and more in ensuring that innovation is operationalized daily (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Formal, analytical	Narrative, experiential
<b>Structure</b>	Theory-driven, structured	Story-driven, practice-oriented
<b>Focus</b>	Governance models, strategic coordination	Ownership, execution, leadership
<b>Innovation view</b>	Systemic and organizational	Operational, action-based
<b>Time</b>	Long-term innovation capability	Immediate and ongoing impact
<b>Communication model</b>	Informational and explanatory	Pragmatic and persuasive
<b>Style</b>	Impersonal, objective	Humanized, experience-based

### 3.Q2 Dimensions in Question 2

#### Conclusion

The academic answer is objective and research-based and tries to explain the CINO role based on theories such as the strategic frameworks. There is a solution, and it cites studies that support this solution, demonstrating that CINO is based on strategy, culture, and cross-functional governance models, as mentioned also by Antony et al. (2017). List challenges, and there is flexibility to the roles throughout the company. On the other hand, the CEO's perspective answers with an experienced insight, which is more reflective and personal, and innovation is important when it becomes reactive, the roles

aren't essential at all, and there are company examples and tools used in practice. This leadership model and approach can have similar insights to Pisano (2019) that support the learning process throughout failure and provide safe spaces for experimentation. This comparison shows that academic discourse frames the CEO as a formal solution, and business practices emphasize innovative leadership as a necessity, empowering the concept that prompting includes pragmatic interpretation of roles within the organization.

### Question 3: What Is the C-Suite’s Role in Facilitating Innovation?

#### **LLM Outputs**

##### Academic Output

“The C-Suite plays a foundational role in facilitating innovation by setting strategic intent, establishing governance structures, fostering an innovation culture, allocating resources, and defining accountability mechanisms. Drawing on McKinsey (2021), O’Reilly and Tushman (2004), and Schein (2010), innovation is framed as a managed, systemic organizational capability supported by ambidextrous structures, stage-gate processes, and executive oversight (OpenAI, 2025).”

##### Business Output

“The C-suite acts as the cockpit of innovation, shaping the conditions under which innovation can thrive. Through clear vision-setting, mindset modeling, investment in talent and tools, agile governance, and the removal of silos, executives actively enable innovation as a daily leadership responsibility rather than a delegated function (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Formal, analytical	Reflective, experiential
<b>Structure</b>	Theory-driven, structured	Story-driven, practice-oriented
<b>Focus</b>	Governance, strategy, systems	Vision, execution, culture
<b>View of role</b>	Formal C-suite authority and oversight	Active leadership and enabler role
<b>Innovation view</b>	Systemic, managed organizational capability	Operational, action-based leadership
<b>Time</b>	Long-term innovation capability	Immediate and ongoing impact
<b>Communication model</b>	Informational and explanatory	Pragmatic and persuasive
<b>Style</b>	Impersonal, objective	Humanized, experience-based

#### *3.Q3 Dimensions in Question 3*

#### Conclusion

The academic answer has analytical and evidence information, uses studies and theory, and supports that the C-Suite is a multifaceted enabler that is responsible for the culture, the resources, and establishing accountability, giving emphasis to corporate strategy and ROI (McKinsey C., 2021). Speaking about ambidextrous structures and stage-gate

processes, recommends innovation with labs and organizational slack, or by partnering with startups and open innovation. The CEO emphasizes more personal and real-life entrepreneurial examples, uses storytelling, and frames the C-Suite as active participants, which sets clarity and provides tools while creating structures for agility, and the structure is flexible, fast, and with not much structure, opposite to academic. Also, it is practical and tactical. This comparison shows that academic discourse conceptualizes the C-Suite’s role in innovation through structure, and business practice emphasizes leadership, agility, and cultural influence, empowering the prompting in shaping communication and interpretation of the innovation.

#### Question 4: What Are the Major Roles and Capabilities in a Setting That Is Truly Innovative?

##### **LLM Outputs**

###### Academic Output

“Truly innovative organizations operate as ecosystems composed of distinct roles and organizational capabilities. These include innovation leaders, product owners, intrapreneurs, cross-functional teams, ecosystem connectors, and change agents, supported by capabilities such as absorptive capacity, dynamic capabilities, psychological safety, experimentation, and organizational learning (Cohen & Levinthal, 1990; Teece et al., 1997; Edmondson, 1999) (OpenAI, 2025).”

###### Business Output

“Innovation is not the responsibility of a few creative individuals, but an organizational capability built through complementary roles such as strategists, explorers, inventors, builders, connectors, and validators. These roles are enabled by shared capabilities like curiosity, agility, collaboration, experimentation literacy, and psychological safety, making innovation a daily habit rather than a sporadic activity (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Formal, analytical	Reflective, experiential
<b>Structure</b>	Theory-driven, structured	Story-driven, practice-oriented
<b>Focus</b>	Governance, strategy, systems	Vision, execution, culture
<b>View of role</b>	Formal C-suite authority and oversight	Active leadership and enabler role
<b>Innovation view</b>	Systemic, managed organizational capability	Operational, action-based leadership
<b>Time</b>	Long-term innovation capability	Immediate and ongoing impact
<b>Communication model</b>	Informational and explanatory	Pragmatic and persuasive
<b>Style</b>	Impersonal, objective	Humanized, experience-based

#### *3.Q4 Dimensions in Question 4*

## Conclusion

The academic perspective has a citation and theory-driven base, while the CEO has a more narrative and practical approach, as mentioned before. The academic defines innovation as an ecosystem of roles and capabilities, with an emphasis on structure, models, and long-term sustainability. While a CEO is a leader based more on practicality and narrative, as the person is an explorer, inventor, and builder, there is curiosity and agility, more emotionally driven behavior, and more actionable steps that are more about innovation culture inside the company. Finally, adaptability and agility exist in both perspectives and match with the Teece et al. (1997) theory about the ability to sense, seize, and transform in response to change. This comparison shows that academic discourse frames innovation through formal roles and organizations and empowers the idea that prompting shapes how innovation is conceptualized, enacted, and communicated with LLM discourse.

### Question 5: Start-Up Innovation – Does Diversified Perception Allow for Smarter Solutions?

#### LLM Outputs

##### Academic Output

“Startups benefit significantly from diversified perception, as cognitive and demographic diversity enhances creativity, decision-making, and learning under uncertainty. Drawing on research by Page (2007), BCG (2018), and Lean Startup principles, diversity enables startups to avoid groupthink, iterate more effectively, and develop solutions with stronger market relevance and resilience (OpenAI, 2025).”

##### Business Output

“In startup environments, diverse perspectives are a strategic advantage rather than a moral ideal. Teams with varied backgrounds, disciplines, and experiences generate smarter solutions, surface blind spots, and reduce risk. Diversified perception strengthens creativity, accelerates learning, and embeds innovation into everyday decision-making (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Analytical, research-based	Narrative, experiential
<b>Structure</b>	Theory- and evidence-driven	Story-driven, practice-oriented
<b>View of diversity</b>	Cognitive and demographic construct	Lived organizational reality
<b>Innovation framing</b>	Systemic and sustainable	Agile, situational, fast learning
<b>Risk management</b>	Avoidance of groupthink	Exposure and correction of blind spots
<b>Learning approach</b>	Structured iteration	Continuous, experience-based learning
<b>Time horizon</b>	Long-term resilience	Immediate adaptability and growth

#### 3.Q5 Dimensions in Question 5

##### Conclusion

The academic perspective includes citation and theoretical approach with research, models, and frameworks, defines the innovation as an ecosystem of roles and capabilities, with also having sustainability. On the other side, the CEO’s perspective is a more narrative and practical approach, as the founder is the explorer and the inventor who has different experiences, more actionable steps to take than the

theoretical approach. Both mention the adaptability and agility, which align with Teece et al. (1997), specifically the ability to sense, seize, and transform in response to change. This comparison shows that while academic discourse was constructed through theoretical constructs and evidence, at the same time, business practices gave emphasis on problem framing, and learning speed, empowering prompt engineering in innovation making, especially in a diverse context.

### Question 6: How Do You Identify Innovation Opportunities?

#### LLM Outputs

##### Academic Output

“Innovation opportunities are identified through systematic analysis of customer needs, market trends, technological enablers, internal capabilities, and regulatory shifts. Frameworks such as Jobs-to-be-Done, Design Thinking, Blue Ocean Strategy, and Lean Startup provide structured approaches for uncovering and validating opportunity spaces, supported by organizational cultures that encourage exploration and learning (OpenAI, 2025).”

##### Business Output

“Innovation opportunities emerge from obsessive customer listening, tracking friction, mapping journeys, scanning future signals, empowering frontline teams, and validating ideas quickly. Opportunity identification is treated as a repeatable discipline grounded in observation, experimentation, and fast iteration rather than abstract analysis (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Analytical, systematic	Narrative, experiential
<b>Structure</b>	Framework- and model-driven	Step-by-step, action-oriented
<b>Opportunity sources</b>	Customers, trends, technology, and regulation	Customer friction, frontline insight, internal pain
<b>Time horizon</b>	Short-, mid-, and long-term	Immediate and near-term
<b>Validation logic</b>	Formal methods and tools	Rapid testing and iteration
<b>Innovation process</b>	Institutionalized and ongoing	Embedded in daily practice
<b>Speed emphasis</b>	Deliberate and structured	Fast-moving and adaptive

#### 3.Q6 Dimensions in Question 6

##### Conclusion

The academic perspective highlights systematic models and ecosystems, and emphasizes sources of opportunity, ranging from customer pain points to trends, while also mentioning the organizational enablers that foster innovation, exploration, and sustainability. In contrast, the CEO’s perspective is narrative and experiential, live practice and actionable points, use of tools, and a more pragmatic and fast-moving

approach. This comparison shows that academic discourse identifies opportunities through structured frameworks and analysis, and business practice, on the other side give emphasis to experiment, action-based learning, and empowers the role-based prompting that shapes the communication.

### Question 7: Does Corporate Innovation Require a Methodology?

#### LLM Outputs

##### Academic Output

“Corporate innovation requires a methodology to ensure effectiveness, repeatability, and scalability. Frameworks such as Design Thinking, Lean Startup, Stage-Gate, the Three Horizons model, and dual operating systems provide structure across the innovation lifecycle, aligning innovation activities with strategy, governance, and capability building (OpenAI, 2025).”

##### Business Output

“In corporate environments, innovation without methodology becomes random and unscalable. A clear, hybrid methodology channels creativity into impact through defined phases, rapid experimentation, learning loops, and decision criteria that help teams prioritize, validate, and scale ideas with confidence (OpenAI, 2025).”

Dimension	Academic Response	CEO Response
<b>Tone</b>	Formal, analytical	Practical, experiential
<b>Structure</b>	Framework- and model-driven	Tool- and process-driven
<b>View of methodology</b>	Strategic system	Operational enabler
<b>Primary function</b>	Alignment, scalability, governance	Clarity, speed, execution
<b>Innovation risks addressed</b>	Fragmentation, misalignment	Randomness, “innovation theater”
<b>Learning approach</b>	Formal capability building	Fast feedback and iteration
<b>Leadership focus</b>	Institutional design	Decision-making confidence

#### 3.Q7 Dimensions in Question 7

#### Conclusion

The academic views corporate methodologies as a structured system based on frameworks that are mentioned thoroughly, highlighting the importance of the formal building of training programs. The CEO’s perspective, as mentioned above, is more practical and experience-driven, using simple tools like test cards, idea scoring, and

Learning databases that drive innovation. There are more clarity, decision-making, and leadership. This comparison shows that academic discourse conceptualizes innovation methodology through formal frameworks and structures; on the other hand, business practice focuses on methodology, clarity, and prioritization, empowering the role of prompting in innovation processes.

### Question 8: What Are the Main Digital Innovation Tools?

#### LLM Outputs

##### Academic Output

“Digital innovation tools are categorized as platforms and systems that support ideation, collaboration, experimentation, portfolio management, foresight, and scaling. These tools enable structured, data-driven, and scalable innovation processes by reducing friction, enhancing coordination, and accelerating insight generation across organizations (OpenAI, 2025).”

##### Business Output

“Digital innovation tools act as multipliers for innovation by accelerating ideation, collaboration, experimentation, and learning. Tools such as Miro, Notion, Slack, Figma, no-code platforms, analytics dashboards, and AI-powered systems are embedded in daily workflows to turn insights into action quickly and collaboratively (OpenAI, 2025).”

Dimension	Academic Response	CEO Response
<b>Tone</b>	Analytical, systematic	Practical, experiential
<b>Structure</b>	Category- and taxonomy-based	Tool- and workflow-based
<b>Tool purpose</b>	Enable scalability and governance	Enable speed and execution
<b>Innovation logic</b>	Data-driven and structured	Action-oriented and iterative
<b>Level of abstraction</b>	High-level overview	Concrete, operational detail
<b>View of AI tools</b>	Emerging productivity enablers	Everyday innovation companions
<b>Collaboration focus</b>	Organizational systems	Cross-functional daily practice

#### 3.Q8 Dimensions in Question 8

##### Conclusion

The academic perspective has a structured way to present the different categories, such as ideation platforms, customer insights, and prototyping. And emphasis on the structure, scaling, and data-driven innovation, while the CEO’s perspective again is practical-oriented, with specific tools to brainstorm like OpenAI, furthermore, day-to-day actions, cross-functional collaboration, and real company settings are in use to this perspective. This comparison shows that academic discourse conceptualizes digital innovation tools through structure and strategic alignment, while business practice places more emphasis on the operational value in learning, collaborating, and execution.

**Question 9: How Do You Measure Innovation Output and Impact?**

**LLM Outputs**

**Academic Output**

“Innovation measurement requires a balanced and staged approach combining input, process, output, outcome, and cultural metrics. Frameworks such as innovation scorecards and innovation accounting enable organizations to track investment, learning velocity, tangible outputs, and long-term business impact while avoiding over-reliance on lagging indicators (OpenAI, 2025).”

**Business Output**

“Innovation measurement should focus on real business impact, learning, and portfolio value. By defining innovation objectives first and tracking metrics across inputs, processes, outputs, learning, and cultural signals, organizations can evaluate innovation not only by ROI but by adaptability and future growth potential (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Analytical, evaluative	Pragmatic, decision-oriented
<b>Structure</b>	Metric frameworks and dashboards	Portfolio-based measurement
<b>Measurement focus</b>	Balance of inputs, outputs, culture	Business impact and learning
<b>View of ROI</b>	One metric among many	Necessary but insufficient
<b>Time horizon</b>	Short-, mid-, and long-term	Long-term growth and adaptability
<b>Learning emphasis</b>	Innovation accounting	Institutionalized learning
<b>Strategic use</b>	Accountability and visibility	Investment and prioritization

*3.Q9 Dimensions in Question 9*

**Conclusion**

The academic focuses on balancing frameworks of input processes, metrics based on culture, with systems; on the other hand, the CEO’s perspective is using portfolio management, tailored metrics for innovation, and the business impact is highlighted as much as organizational learning that measures innovation success. This comparison shows that while academic discourse frames innovation through measures and metrics, business emphasizes portfolio-based evaluation and learning impact, empowering innovative accountability.

### Question 10: How Significant Is Culture for Corporate Innovation?

#### LLM Outputs

##### Academic Output

“Organizational culture is the most critical enabler of corporate innovation, shaping behaviors, risk-taking, collaboration, and learning. Drawing on Schein’s model of culture, psychological safety research, and innovation culture frameworks, innovation is framed as dependent on shared values that support experimentation, autonomy, and customer focus (OpenAI, 2025).”

##### Business Output

“Culture determines whether innovation happens. Psychological safety, curiosity, cross-functional collaboration, and value-aligned incentives enable teams to experiment, learn from failure, and co-create solutions. Innovation thrives when leaders model these behaviors and embed them into daily practices (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Analytical, conceptual	Experiential, motivational
<b>Structure</b>	Theory and model-driven	Practice- and action-driven
<b>View of culture</b>	Systemic organizational foundation	Lived leadership behavior
<b>Key emphasis</b>	Values, norms, learning systems	Psychological safety, rituals, incentives
<b>Role of leadership</b>	Cultural architects	Cultural role models
<b>Innovation logic</b>	Long-term sustainability	Daily behavior and execution
<b>Change mechanism</b>	Alignment of culture, structure, and KPIs	Visible actions and reinforcement

#### 3.U10 Dimensions in Question 10

##### Conclusion

The academic perspective had the culture as the main system for operating about innovation, learning, collaboration, and customer focus; on the other hand, practical actions are given to the CEO’s answer, which is about the leaders sharing failures, cross-functional squads, and experimentation, which means action-oriented. This comparison shows that academically text focuses on culture as a foundation for

innovation, while business texts focus on culture as enacted in everyday leadership situations.

### Question 11: What Are the Most Frequent Innovation Blockers?

#### LLM Outputs

##### Academic Output

“Innovation is frequently constrained by structural, cultural, and strategic blockers such as organizational inertia, risk aversion, short-termism, misaligned metrics, bureaucracy, and capability gaps. Drawing on Christensen’s Innovator’s Dilemma, psychological safety research, and innovation governance literature, these blockers are framed as systemic and interrelated challenges (OpenAI, 2025).”

##### Business Output

“Innovation fails not because of a lack of ideas, but due to systemic blockers embedded in culture, incentives, and decision-making structures. Fear of failure, silos, lack of executive sponsorship, excessive approvals, and missing methodologies prevent ideas from moving into action unless actively removed and replaced with enabling systems (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Analytical, diagnostic	Direct, solution-oriented
<b>Structure</b>	Theory- and research-driven	Problem–solution framing
<b>View of blockers</b>	Systemic and interrelated	Practical and observable
<b>Key barriers</b>	Inertia, risk aversion, short-termism	Fear, silos, bureaucracy
<b>Role of culture</b>	Psychological safety and norms	Mindset and behavior change
<b>Governance focus</b>	Metrics, strategy alignment	Fast lanes and empowerment
<b>Response strategy</b>	Structural and cultural reform	Actionable fixes and rituals

#### 3.U11 Dimensions in Question 11

##### Conclusion

The academic perspective, through theory and research, analyzes the blocks such as risk aversion, short-termism, bureaucracy, and misaligned metrics with alignment with cultural change and governance. The CEO’s perspective highlights the same issues but

focuses on how to solve these matters with cross-functional squads, fast-tracking pilots, and hiring for agility, a more experience-based solution. This comparison shows that academic discourse identifies blockers through systematic analysis, while business focuses on practical interventions that take out the constraints by activating structures, empowering challenges and solutions into the LLM responses.

## Question 12: How Would You Foster an Experimentation Mindset?

### LLM Outputs

#### Academic Output

“An experimentation mindset is grounded in hypothesis-driven thinking, rapid iteration, and learning-oriented evaluation. Drawing on scientific inquiry, Design Thinking, and Lean Startup principles, organizations foster experimentation through leadership role modeling, psychological safety, structured tools, training programs, and governance mechanisms that prioritize learning over short-term success (OpenAI, 2025).”

#### Business Output

“An experimentation mindset emerges when teams are empowered to test ideas easily, safely, and visibly. By lowering the cost of experimentation, making tests transparent, rewarding learning, training teams in hypothesis testing, and ensuring psychological safety, experimentation becomes a habitual and organization-wide practice (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Tone</b>	Conceptual, instructional	Practical, action-oriented
<b>Structure</b>	Theory- and method-driven	Tool- and practice-driven
<b>View of experimentation</b>	Scientific and systematic	Everyday organizational habit
<b>Key enablers</b>	Leadership, tools, training, culture	Ease of testing, visibility, rewards
<b>Failure framing</b>	Learning mechanism	Normalized and encouraged
<b>Scope</b>	Organization-wide capability	Team-level daily practice
<b>Measurement focus</b>	Learning velocity and insight	Speed, participation, transparency

### 3.U12 Dimensions in Question 12

#### Conclusion

The academic perspective focuses on experimentation as a practice of scientific inquiry. Design thinking with leadership and structure tools, training, and cultural enablers. The CEO’s perspective is practical, focusing on lowering the cost of trying to use non-code tools, experimentation, testing, and rewarding learning with visible actions. This comparison shows that while academic discourse focuses on experimentation as a

teachable methodology, business practice, on the other hand, includes experimentation as a cultural habit with tools and leadership support, empowering how behaviors affect the LLM outcomes.

### Question 13: Do Companies Need an Innovation Community?

#### LLM Outputs

##### Academic Output

“Innovation communities are structured, cross-functional, and often platform-supported networks that democratize innovation, enhance cultural transformation, support experimentation, and integrate diverse stakeholders into formal innovation pipelines (OpenAI, 2025).”

##### Business Output

“Innovation communities function as communities of practice that reduce isolation, enable cross-pollination, spread shared tools and language, build cultural momentum, and empower grassroots leadership across the organization (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Response</b>	<b>CEO Response</b>
<b>Conceptual framing</b>	Innovation as a structured system	Innovation as a social movement
<b>Community role</b>	Formal innovation mechanism	Cultural connector and enabler
<b>Focus</b>	Governance, platforms, scale	People, energy, participation
<b>Knowledge flow</b>	Managed and integrated into pipelines	Organic and peer-driven
<b>Leadership model</b>	Facilitated and sponsored	Distributed and grassroots
<b>Value emphasis</b>	Strategic alignment and scalability	Belonging, momentum, empowerment

#### 3.U13 Dimensions in Question 13

##### Conclusion

The academic perspective mentions the innovation as a structure, cross-functional networks with cultural transformation and experimentation that is based on the platforms, governance, and systems, such as cases like LEGO Ideas or Siemens Innovation Jam. The CEO’s perspective is more practical and people-oriented, mentioning communities, forums, tools, and empowering leadership. As a conclusion, the actionable steps are part of the second perspective. This comparison shows that innovation is functioning as a formal infrastructure and as a cultural catalyst, prioritizing structure and governance, while the business tends to be more participatory, identity, and collectivity. Those two perspectives shape innovation communities, empowering the fact that meaning is negotiated through communication rather than fixed outputs.

### Question 14: How Does Innovation Fit with Agile Development?

#### LLM Outputs

##### Academic Output

“Agile development provides the executional framework that enables innovation through rapid prototyping, iteration, customer feedback, and cross-functional collaboration, while also presenting integration challenges related to uncertainty, culture, and long-term strategy (OpenAI, 2025).”

##### Business Output

“Agile is a delivery engine that makes innovation executable, while innovation gives Agile means by ensuring teams build the right things—not just deliver faster (OpenAI, 2025).”

Dimension	Academic Perspective	CEO Perspective
<b>Primary framing</b>	Agile as an innovation enabler	Agile as an execution engine
<b>Core emphasis</b>	Principles, frameworks, and tensions	Speed, learning, and delivery
<b>View of Agile</b>	Methodological system	Practical operating rhythm
<b>Innovation focus</b>	Alignment, discovery, and governance	Experimentation and problem-solving
<b>Risks identified</b>	Over-iteration, cultural misfit	Agile becoming delivery-only
<b>Success condition</b>	Strategic alignment and culture	Leadership protection of exploration

#### 3.U14 Dimensions in Question 14

#### Conclusion

The academic perspective approaches Agile as an innovation with frameworks and integration challenges. The CEO’s perspective focuses on practice, showing how Agile gives the spark for experimentation and how innovation prevents Agile from becoming just a delivery by using tools that track Agile and metrics. This comparison shows that Agile and innovation are perceived differently based on the communicative concept. Academically, Agile is structured and works through iteration, feedback, and strategy, while from the CEO perspective, Agile is more of a tool that provides experimentation and problem-solving. Here, we can connect with the theory as innovation is shaped by communication and framework. The same concept, for example, Agile, is producing different results depending on the context. This confirms that LLMs not only generate information but also adapt to new narratives, and shows how prompting influences the explanation, prioritization, and understanding.

### Question 15: How Would You Define the Truly Agile Organization?

#### LLM Outputs

##### Academic Output

“A truly agile organization embeds agility as a strategic, structural, and cultural mindset, enabling decentralized decision-making, rapid learning, customer-centric value creation, and continuous adaptation (OpenAI, 2025).”

##### Business Output

“A truly agile organization operates as a cultural operating system—customer-driven, empowered, learning-oriented, and capable of adapting without waiting for top-down control (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Perspective</b>	<b>CEO Perspective</b>
<b>Definition of agility</b>	Organizational system and mindset	Cultural operating system
<b>Core emphasis</b>	Structure, strategy, and governance	Behavior, empowerment, and learning
<b>Team organization</b>	Networked, modular teams	Cross-functional, outcome-driven teams
<b>Leadership role</b>	Enablers and coaches	Coaches and trust-builders
<b>Learning approach</b>	Continuous experimentation and ambidexterity	Reflection, retrospectives, and exploration
<b>View of agility</b>	Long-term transformation	Everyday operational reality

#### 3.U15 Dimensions in Question 15

##### Conclusion

The academic perspective discusses Agile frameworks, case studies, customer focus, network teams, and cultural transformation. On the other hand, oriented Agile through direct customer input, exploration, and cultural habits is the perspective of CEOs. This comparison shows that academically, agility is an organizational architecture that brings adaptability; from a business point of view, it empowers people to change. So, using these two perspectives for the practical part shows us that innovation and agility are not standardized, but they are shaped through discourses and communication intentions. Also, LLM produces narratives and innovation on rhetorical instruction, confirming that prompting functions as meta-communication that shapes the meaning.

## Question 16: Do Public Sector Companies Innovate?

### LLM Outputs

#### Academic Output

“Public sector organizations innovate through digital transformation, policy experimentation, open innovation, and process redesign, driven by public value creation rather than profit (OpenAI, 2025).”

#### Business Output

“Public sector organizations innovate under constraint, often achieving high-impact solutions through citizen-centered design, partnerships, and creative problem-solving within regulatory limits (OpenAI, 2025).”

Dimension	Academic Perspective	CEO Perspective
<b>Definition of innovation</b>	Mission-driven public value creation	Practical problem-solving under constraints
<b>Primary motivation</b>	Societal impact, efficiency, trust	Scale, equity, and service effectiveness
<b>Innovation forms</b>	Digital government, policy labs, sandboxes	No-code pilots, service design, partnerships
<b>Key drivers</b>	Citizen expectations, crises, leadership	Urgency, impact, necessity
<b>Main barriers</b>	Bureaucracy, risk aversion, political cycles	Fear of scrutiny, legacy systems
<b>Enablers</b>	Innovation labs, frameworks, Governance	Mindset shift, safe experimentation

### 3.U16 Dimensions in Question 16

#### Conclusion

The academic side frames the public sector of innovation through systemic drivers, barriers, and labs, sandboxes, and global frameworks. Although the CEO’s perspective highlights practical lessons as mentioned before, there is innovation under constraints, people-centric designs, partnerships, and overcoming fear is mentioned as key to achieving. This comparison shows that public sector innovation isn’t inferior to the private sector but is differently constituted. Academically, policies, labs, and governance are mainly ways, while on the business side is more creative with fewer constraints and more partnerships. The ability of the LLMs to interchange based on the prompting shows us that innovation discourse is created by communication, context, and logic.

### Question 17: Digital Transformation – What Is It All About?

#### LLM Outputs

##### Academic Output

“Digital transformation is a strategic and organizational shift that integrates digital technologies across business models, processes, culture, and capabilities to create value and sustain competitiveness (OpenAI, 2025).”

##### Business Output

“Digital transformation is a mindset and cultural reset that redefines how organizations serve customers, use data, and adapt continuously in a digital-first environment (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Perspective</b>	<b>CEO Perspective</b>
<b>Core definition</b>	Strategic integration of digital technologies	Organizational mindset and cultural reset
<b>Primary focus</b>	Business models, systems, and frameworks	Customer experience, culture, and agility
<b>Transformation drivers</b>	Technology, strategy, and leadership	Customer expectations and data
<b>Role of culture</b>	One dimension among others	Central success factor
<b>View of technology</b>	Enabler of systemic change	Tool that supports mindset shift
<b>Time horizon</b>	Structured roadmap and maturity stages	Ongoing, never-ending journey

#### 3.U17 Dimensions in Question 17

##### Conclusion

The academic perspective considers digital transformation as an inclusion of technological features across business models, processes, culture, and business models. The CEO’s perspective gives attention to the customer, cultural change, and data that brings transformation. This comparison shows that digital transformation is not only based on technological adoption but also in the process of communication exchange, meaning, and ways of working. Academically, it is strategic, though it has a customer and culture shift. So, the ability to change based on the prompt brings digital transformation, and like innovation, is created by discourse, roles, and context. Finally, the meta-communication is obvious by the fact that academic prompts produce formal and model explanations, while the business focuses on action-oriented meaning, and we can understand that the is shaped the content and how it is understood.

### Question 18: What Is Open Innovation?

#### LLM Outputs

##### Academic Output

“Open innovation is a paradigm in which firms purposively manage knowledge inflows and outflows to accelerate internal innovation and expand external value creation (OpenAI, 2025).”

##### Business Output

“Open innovation is about deliberately opening organizational boundaries to collaborate, co-create, and innovate faster by leveraging external talent, ideas, and technologies (OpenAI, 2025).”

<b>Dimension</b>	<b>Academic Perspective</b>	<b>CEO Perspective</b>
<b>Core definition</b>	Knowledge inflows and outflows across firm boundaries	Collaboration and co-creation beyond the firm
<b>Theoretical basis</b>	Chesbrough’s open innovation paradigm	Lived entrepreneurial experience
<b>Primary motivation</b>	Speed, efficiency, ecosystem value	Speed, cost reduction, and risk sharing
<b>Innovation mechanisms</b>	Crowdsourcing, CVC, APIs, research partnerships	Startups, universities, hackathons, platforms
<b>Key challenges</b>	IP, integration, cultural resistance	Ownership, internal adoption, mindset
<b>View of openness</b>	Strategic and governed	Pragmatic and opportunity-driven

### 3.U18 Dimensions in Question 18

#### Conclusion

The academic perspective speaks about Chesbrough’s theory, highlighting inbound/outbound knowledge, mechanisms, and challenges like IP and resistance. The CEO’s perspective focuses on practical applications, which stress speed, cost savings, and risk-sharing as the main benefits. This comparison shows that open innovation is conceptual, communicative, and cultural all in one. Academically, through models and mechanisms, while practically through partnerships and experiments. The LLM's role-based outputs show that the meaning of open innovation, whether we speak about academic or practical, shows that concepts are created by discourse and context. Functions as meta-communication as we instruct the LLM to adopt specific roles, which means that they reproduce specific roles' logic through the language.

### Question 19: Patent or Don’t Patent? Do I Need an IP Strategy?

#### LLM Outputs

##### Academic Output

“Patenting decisions depend on industry, innovation type, and competitive context; however, a comprehensive IP strategy is essential for managing and leveraging intangible assets (OpenAI, 2025).”

##### Business Output

“An IP strategy is necessary, but patents should be used selectively—only when they clearly support business goals such as protection, valuation, or licensing (OpenAI, 2025).”

Dimension	Academic Perspective	CEO Perspective
<b>View on patents</b>	One tool within a broader IP strategy	Optional tool, used selectively
<b>Primary focus</b>	Portfolio management and strategic alignment	Business value, speed, and ROI
<b>Decision criteria</b>	Industry dynamics, innovation type, competition	Market timing, cost, execution advantage
<b>Role of disclosure</b>	Managed through legal frameworks	Viewed as a potential competitive risk
<b>Alternative protections</b>	Trade secrets, licensing, trademarks	Trademarks, trade secrets, first-mover advantage
<b>Strategic logic</b>	Long-term, structured IP governance	Pragmatic, goal-driven protection

#### 3.U19 Dimensions in Question 19

##### Conclusion

The academic perspective sees patents as part of the IP strategy, structure, portfolio management, and context-based decisions. The CEO’s approach is pragmatic, which means favoring patents only when they have clear business value and when they rely on trademarks or speed-to-market. This comparison shows that both parties agree on the IP strategy, but they differ in how protection is justified. Specifically, academic patents are used in structured innovational governance, while practically for the support of the business goals. So, decisions that are related to innovation, such as IP strategy, are not only technical but also have a communication framework, roles, and logic. Function as meta-communication because prompts guide interpretation and prioritization, as we have seen above, and the pattern from the academic and practical perspective strengthens the idea that innovation narratives are based on rhetorical and contextual instructions.

### Question 20: What Are the Top Three Technologies That Will Drive Innovation?

#### LLM Outputs

##### Academic Output

“Artificial Intelligence, quantum computing, and biotechnology are general-purpose technologies that will drive cross-sector innovation and long-term societal transformation (OpenAI, 2025).”

##### Business Output

“Artificial Intelligence, quantum computing, and extended reality are the technologies most likely to generate near- and mid-term innovation through scalable business applications (OpenAI, 2025).”

Dimension	Academic Perspective	CEO Perspective
<b>Technology selection logic</b>	Long-term, cross-sector impact	Near- to mid-term business value
<b>Core technologies</b>	AI, quantum computing, biotechnology	AI, quantum computing, XR
<b>Time horizon</b>	Decades and structural change	Immediate to medium-term adoption
<b>Innovation lens</b>	Scientific breakthroughs and societal challenges	Product development and market differentiation
<b>Role of convergence</b>	AI + biotech + quantum	AI + XR + operational tools
<b>Emphasis</b>	Economics and civilization transformation	Practical deployment and ROI

#### 3.U20 Dimensions in Question 20

##### Conclusion

The academic perspective has AI, biotechnology, and quantum computing as transformational aspects, emphasizing the economic impact, alignment with main trends, while the CEO’s perspective has also AI and quantum computing, as mentioned to the academic, but replaces biotechnology with the XR reality, focusing on the practical side of business application like immersive training, e-commerce and collaboration, in conclusion focuses more in business value and adoption paths. This comparison shows that assessments are shaped by communicative contexts. For example, academic discourse places emphasis on the long-term transformation, while practical discourse is more about technologies with clear, measurable values. So, the different responses prove that it is not neutral but created by the role-based framework,

which means that they are based on the context. Finally, LLMs adapt technology narratives based on the framework of the prompts, something that we see in all the questions, so supporting the conclusion prompting is a meta-communication that determines the content, the orientation, and the relevance of innovational technologies.

### Question 21: How Can Innovation Solve the World's Greatest Challenges?

#### LLM Outputs

##### Academic Output

"Innovation addresses global challenges through technological, social, business model, and governance innovation, guided by mission-oriented and systems-level frameworks (OpenAI, 2025)."

##### Business Output

"Innovation tackles global problems by applying technology and entrepreneurship directly to climate, healthcare, food, and education challenges at scale (OpenAI, 2025)."

Dimension	Academic Perspective	CEO Perspective
<b>View of global challenges</b>	Complex, systemic, interconnected	Concrete, urgent, problem-specific
<b>Types of innovation emphasized</b>	Technological, social, policy, systems	Technological and entrepreneurial
<b>Primary frameworks</b>	Mission-oriented innovation, SDGs, systems innovation	Climate-tech, health-tech, ed-tech
<b>Role of institutions</b>	Governments, policy, global coordination	Startups, partnerships, market action
<b>Time horizon</b>	Long-term societal transformation	Immediate to mid-term impact
<b>Innovation logic</b>	Purpose-driven and collective	Action-driven and solution-oriented

#### 3.U21 Dimensions in Question 21

##### Conclusion

The academic perspective has innovation as a systemic, multidimensional tool for handling global challenges, emphasizing technological, social, business model, and governance innovation that is supported by the frameworks and theory. The CEO's perspective is again more practical and issue-driven, focusing on climate, healthcare, food systems, and educational concepts, so more real-world examples and entrepreneurial problem-solving. This comparison shows that solving challenges is constructed differently based on the role. Specifically, the academic perspective sees innovation as systemic, mission-centered, and collaborative, while the practical focus is on technological solutions and entrepreneurial initiatives. The diverse outputs show that innovational narratives are shaped by communicative role, context, and purpose,

while we get confirmation that prompting functions are meta-communication, not only what exactly is, but how the societal roles are perceived.

## Question 22: What Is the Future of Work, and How Is It Shaped by Innovation?

### LLM Outputs

#### Academic Output

“The future of work is a systemic transformation shaped by technological innovation, workforce expectations, and organizational redesign, requiring new skills, policies, and inclusive frameworks (OpenAI, 2025).”

#### Business Output

“The future of work is a human-first, tech-enabled ecosystem defined by flexibility, AI-augmented productivity, lifelong learning, and purpose-driven teams (OpenAI, 2025).”

Dimension	Academic Perspective	CEO Perspective
<b>Nature of change</b>	Structural and systemic transformation	Experiential and cultural transformation
<b>Primary drivers</b>	AI, automation, XR, IoT, demographics	Hybrid work, AI productivity, flexibility
<b>Focus of analysis</b>	Labor systems, skills, policy, inequality	Teams, productivity, wellbeing, talent
<b>Skills emphasis</b>	Digital literacy, adaptability, critical thinking	Lifelong learning, soft skills, autonomy
<b>Work models</b>	Hybrid, gig economy, project-based systems	Remote-first, asynchronous, fluid teams
<b>Role of innovation</b>	Both disruptor and stabilizer	Enabler of performance and meaning
<b>Time horizon</b>	Long-term societal evolution	Immediate organizational adaptation

### 3.U22 Dimensions in Question 22

#### Conclusion

The academic perspective shows a future as a systemic transformation of technology with AI, XR, IoT, workforce expectations, and innovation into the organizations. Frameworks, skills of the future, and challenges like inequality, displacement, and regulations. The CEO’s perspective emphasizes the practical aspects, like hybrid models, AI productivity, lifelong learning, purpose-driven work, and cross- functional teams, in other words, focuses on real-world adoption, culture, and experience. This comparison shows that the future of working is differently perceived. Academically is a complex system that provides information from different sectors, such as technological, but on the other hand, business is a live transformation that requires changes in culture, work, and leadership. This reflects how the innovational

discourse changes between the two perspectives based on roles, and the narratives go beyond products and organization, but they focus on the structure of work. So, prompt engineering functions as a framing device that shapes the content, the focus, the scale, and the values.

### 3.5 Compare and Contrast in Review

The comparison between academic perspectives and the CEO's perspective, which is explained individually above, demonstrates how the theory and practice come in the same spectrum of innovation, organizational transformation, and interact. Initially, the academic side is theory-driven, relying on frameworks, models, systemic and research-based analysis, while on the other hand, the CEO's give emphasis on experience, pragmatic situations, and actionable steps. Both perspectives show how theoretical constructs the practical side and how practice refines the theoretical assumptions.

Specifically, the academic perspective is an ecosystem of roles, structures, and long-term sustainability, based on frameworks such as dynamic capabilities (Teece, Pisano, & Shuen, 1997), open innovation (Chesbrough, 2003), and design thinking. These frameworks transform organizational structures to have a competitive advantage. On the other hand, though, there is the CEO's perspective, which describes innovation that is part of everyday life; they mention for themselves that they are explorers and inventors, emphasizing agility, curiosity, and customer learning as central to innovation, such as Pisano's (2019) argument that organizations must build cultures that can handle failure and encourage experimentation.

Furthermore, that academic perspective tends to emphasize systemic transformation, digital ecosystems, such as digital perspectives, structures, and frameworks by the government, and metrics. The CEO's perspective has a more cross-functional approach, hybrid working models, and leadership. This aligns with the sociotechnical systems theory, which says that transformation cannot be achieved by technology alone but also needs the culture, the people, and the experiences that have lived. While academic frameworks outline the barriers to innovation, the other perspective focuses on how these barriers are overcome through fast-tracking pilots, hiring for agility, and empowering communities.

Experimentation is another part of the different perspectives. Academic is structured, there is training, leadership, and tools with systems. Connects the theory of design thinking and experimentation. On the other hand, the CEO's experimentation has a lower cost, no-code tools, and some reward from the learning process. This approach is a live theory in action, as it demonstrates how experimentation occurs in ordinary, day-to-day organizational practice, making abstract models, and ultimately, agility. This is presented academically as a framework, with CEOs clarifying the practical side that occurs through day-to-day collaboration, customer focus, and culture.

From an innovation methodology perspective, the academic perspective emphasizes the platforms, governance, and cross-functional structures, such as the LEGO idea. On the other hand, the CEO's side gives emphasis on communities, forums, and tools, which are enablers of leadership decisions. The theoretical models are accessible and closer to the practical side; the personalized approach of each model drives innovation with frameworks that provide legitimacy at the same time, and the practice and culture drive to the next level. Intellectual property is a theory-practice interaction, as from an academic perspective, patents are part of the broader intellectual property strategies and

portfolio management, while on the other side, the CEO's approach is pragmatic, valuing the speed-to-market and customer trust in the IP portfolios.

Finally, this shows how theory builds the strategic frameworks, and practice prioritizes the commercial side. The trends show that perspectives have been showing several aspects, for example, the academic highlights transformation technologies such as AI, computing, biotechnology, systemic risks like inequality, displacement, and challenges. CEO's aspects acknowledge the AI but focus more on immersive realities like XR, hybrid models, and purpose-driven work. These insights connect to future of work theories, where academic research can give a straightforward vision about structural challenges, and the practical side translates them into the adoption of strategies for workforce expectations, culture, and cross-functional collaborations.

Finally, the combination of these two aspects can offer a useful insight into how theories and understanding innovation with structure, ecosystems, and systemic drivers can provide a durable foundation, while CEO's insights, passing from agility, narratives, and pragmatic decision making, show the way to translate academics. Theories are the basis for change, while the CEO confirms that the models can highlight the dimensions of innovation. Theory and practice have a complete picture of how innovation and structural systems are an adaptive process.

## 4. Integrating AI in Communicative Terms

### 4.1 Revisiting Finding and Implications

Closing the research, the main findings will be explained shortly, from the theoretical to the methodological and practical points. While the previous chapter focused on the detailed comparative analysis, this final chapter will examine the results, how they respond to the research questions, and how they are contributing. The closing will reflect the limitations and outline directions for future research.

The findings of this research show that innovation is not only a technical or managerial process, but it's a constructed process that is shaped by language, context in communication, and frameworks. Specifically, the research showed that AI responses construct their innovative ideas differently by the prompt inputs, for example, from a CEO perspective or from an academic one, which can change the output. Business prompt emphasized live situations, leadership, and purpose; on the other hand, the academic focused on structure, theoretical models, and analysis. Like this, we can answer the question "how innovation is represented across different communicative frames". Secondly, the comparative analysis between Copilot and ChatGPT reveals that different LLMs can produce diverse content, even when using the same prompt. For example, ChatGPT produced more humanized and storytelling results, especially in a CEO perspective context, while Copilot was more formal and academically grounded in their outputs. These findings show that LLMs are not neutral transmitters of information but actively shape meaning through the context. Finally, the image comparison showed that prompting strategies significantly influence visual representations of innovation. More intense contexts, by the prompt, can generate images with greater conceptual clarity and narrative structure, while the generic, more abstract, and symbolic outputs. This finding shows us that problem formulation and language are playing a central role in the outcome. In conclusion, the study demonstrates that innovation means language, as innovation is produced by linguistic inputs and outputs, so language is a central component, not just a medium.

The theoretical contributions of this study can be made in diverse ways, firstly through the innovation theory around the role of language, as the classical and contemporary innovation framework acknowledges the culture and communication. This research shows the actual way that innovation is produced through discourse, frameworks, and narrative. Secondly, there are contributions to communication and rhetoric studies as the study shows how LLM systems produce and stabilize language in different discourses, such as CEO or academic ones. This supports that AI-mediated communication can operate as meta-communication, where the prompt frames devices that guide the meaning. Finally, the study focuses on prompt engineering, not on the technical aspects, but positions it as a mechanism that gives the space for innovation that is negotiated and stabilized in human and LLMs interaction, as the

concept of prompt is now around linguistic, cognitive, and communication aspects apart from the technological aspect.

This research has a qualitative and interpretative approach as it focuses on cooperative analysis of the LLMs' generated outputs, text, and visuals, while having an in-depth exploration of the meaning and how it is constructed, although there are limitations. Specifically, the analysis has selected prompts and questions based on Krasadakis' book (2021), which necessarily shapes the scope of the findings. For example, different prompts or alternative formulations would have produced different outputs. Also, the study focuses on two LLMs at a specific moment, which means the same questions at a different time, due to the evolution of technology and of AI-generated data can be diverse. So, the findings should be considered context-dependent, not generalized. Finally, the interpretation of the results needs analytical considerations; even though a systematic comparison was made and tables were used to enhance transparency, the author's meaning can be considered subjective. All the limitations above don't underestimate the value of the research, but they give emphasis on the importance of reflexivity when studying LLMs in communication contexts.

As Krasadakis book had an important role in this research, it is also important to add the new addition (2022), which emphasizes that the value of AI isn't based only on technological capabilities, but also on human judgment, intention, and context. The study supports this statement as it is proving that innovation in AI environments is constructed through language and communication, especially if we look into the practical part, which is changing significantly if the prompt is formulated under different contexts, perspectives, and intentions. As it is highlighted in the new book of Krasadakis, AI systems function effectively when they have a clear path to follow rather than making decisions as a machine, which means that prompt engineering doesn't include only technical procedure but also a strategic and communicative approach, meaning, relevance, and innovation that are co-created between humans and AI systems. In conclusion, AI is becoming part of the everyday processes, from organizational to strategic and creative, but the question is how human values, culture, and ethics can be upheld within the AI innovation processes as the LLM world keeps growing? Addressing this question is essential for the future of innovation and language-driven technologies.

Implications: there are several. Specifically, for CEO or more generally for business leaders and innovation associates, the results of this research show how innovation is communicated not only in the pursuit of it. Narrative framing, storytelling, and linguistic input shape our understanding of innovation, how it is supported, and legally applied in organizations. For users of LLMs, the study can show that prompt formulation is a skill, as prompt engineering and prompt formulation lead to clearer, meaningful, and actionable outputs, while more generic prompts have generic results. Finally, organizations that take advantage of the use of LLMs can use them as a communicative partner rather than a neutral tool, especially knowing that the different systems can improve their performance.

Future research could take this study one step further; for instance, comparative analysis could be conducted in different LLMs or for longer periods of time in order to examine how discourse can evolve through different processes. Furthermore, quantitative analysis can measure the differences between structures, concepts, and sentiments across the outputs. Also, intercultural studies could explain how innovation discourse varies across languages and cultural contexts in LLM environments. Finally, future research could examine multimodal prompting in-depth when it comes to text, visuals, and other forms.

In conclusion, this thesis demonstrates that mediated innovation by LLMs is a language process, which means that the meaning is shaped by the communicative choices, framing strategies, and interpretive contexts. Language in this research is a mechanism of innovation and shows a framework for understanding how human and LLMs interaction changes the innovative discourses in the contemporary era.

## 4.2 The Motivation of the Researcher

This research is created by the author's diverse academic background in communication, rhetoric, innovation studies, and education, with extensive practical experience in digital marketing and communication, content creation, and the use of AI tools. The author's studies in strategic communication at the University of Padova, with previous participation in an international Erasmus program at Ca' Foscari University of Venice, provided a great exposure to different multilingual environments, which are used in this research, as there is sensitivity in different cultural contexts, discourses, and frameworks, which impact the interpretation of the study.

The interest in this research stems from both personal and professional motivations of the author. This perspective has shaped the formulation of research questions, the selection of the analysis, and the interpretation of findings. I recognize that my presence in the research setting may have influenced the examination of the data, and I have taken steps to remain aware of and mitigate these effects.

At the same time, the author, apart from academic training, has been part of diverse teams working on copywriting, social media management, editing, and digital content production. Specifically, worked with scripts, short-form texts, visual materials, and platform-specific content such as Instagram, LinkedIn, TikTok, Facebook, etc., which created awareness on how the meaning changes through the language, editing, structure, and visual effects. There is also an editorial background through the above, which has influenced the analytical process, especially when we speak about close reading of the AI text and visuals, in understanding the variations in tone, framing, and narrative.

Taking into consideration the background and the particularity of this research, the author takes a dual role as researcher and active participant in the communication process between humans and LLMs (Human-AI interaction). From the design of the prompts, the engagement with LLMs, and the interpretation of the outputs. This engagement required continuous reflexivity as we speak about prompting, where the formulation and the outputs are considered, decisions on the framing, such as academic or a business perspective, something that was chosen due to the familiarity with innovation theory and

discourse, as well as real experience in organizational communicational contexts. It is a path towards an AI fluency framework with Delegation (goal setting), Description (goal description), Discernment (assessing usefulness), and Diligence (taking responsibility).<sup>4</sup> The experimental design was an ongoing process that was influenced by the author's position, experience in international environments, practices in editorial frameworks, and intercultural background, which maintained the awareness and kept the balance. Systematic comparison, refinement, and table creation were used to increase transparency, while the interpretations were based on the author's experience. Although there is an acknowledgment of the great influence in various aspects of this study. Through the research, I engaged in continuous reflection to examine how my assumptions and positionality affected the results and analysis. Using reflexive thinking, I strived for transparency.

Using and engaging with LLMs emphasizes the main concept of the thesis, which is that the user agency plays a crucial role in shaping meaning. A small change in wording, perspective, or context frame can alter both textual and visual outcomes. This observation showed the importance of prompt engineering as a communicative, cognitive, and interpretive practice, and not simply as a technical procedure. As mentioned above, a combination of the author's experience with editing, content creation, and copywriting shaped the interpretation of AI text and visuals. Due to the background, it was familiar with revision, selection, and multiculturalism, which drove in a more critical consideration of the outputs, giving priority to the meaning that comes from interaction, selection, and context. Knowing this is not a negative clue but instead is considered reflexivity as a methodological strength.

In conclusion, international experience, professional background, engagement with communication and editing skills, this research positions reflexivity as a positive component of knowledge creation. The involvement in AI-generated content emphasizes the importance of interaction between human intention, technological systems, and contextual frameworks, which is the main concept of meaning and the emergence of it

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<sup>4</sup>It describes four core competencies (The "4Ds") that lead from "literacy" to "fluency", in a descriptive and normative model of Human-AI interaction, developed by Prof Rick Dakan (Ringling College of Art and Design) and Prof Joseph Feller (University College Cork). The Framework defines AI Fluency as the ability to work effectively, efficiently, ethically, and safely within emerging modalities (automation, agency, and augmentation) of Human-AI interaction. Dakan, Rick and Feller, Joseph. "Framework for AI Fluency (Practical Summary Document)," Version 1.1, [Ringling.edu/ai/](https://ringling.edu/ai/), 2025. <https://ringling.libguides.com/ai/framework> Retrieved on [February 2026 here].

## Bibliography

- Androutsopoulos, J. (2006). *Multilingualism, diaspora, and the internet* (Vol. 10(4)). Journal of Sociolinguistics.
- Anthony, S. D. (2017). *Build an Innovation Engine in 90 Days*. Harvard Business Review.
- Apple. (2024). *The illusion of thinking: Understanding the strengths and limitations of reasoning models via the lens of problem complexity*. Apple Machine Learning Research.
- Aristotle. (1909). *The Rhetoric of Aristotle: A translation* (The University Press Cambridge ed.). Retrieved from <https://archive.org/details/rhetoricofaristo0000sirr>
- Aristotle. (2007). *On rhetoric: A theory of civic discourse* ((2nd ed., G. A. Kennedy, Trans.). ed.). Oxford University Press.
- Austin, J. L. (1962). *How to do things with words*. Oxford University Press.
- Barnlund, D. C. (1970). *A transactional model of communication*. (In K. K. Sereno & C. D. Mortensen ed.). Harper & Row.
- Barry, D., & Elmes, M. (1997). *Strategy retold: Toward a narrative view of strategic discourse*. (Vol. 22(2)). Academy of Management Review.
- Beckert, J. (2016). *Imagined futures: Fictional expectations and capitalist dynamics*. . Harvard University Press.
- Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). *On the dangers of stochastic parrots: Can language models be too big?* Proceedings of the ACM Conference on Fairness, Accountability, and Transparency.
- Bender, E. M.-M. (2021). *On the dangers of stochastic parrots: Can language models be too big?* In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610–623). Association for Computing Machinery. doi:<https://dl.acm.org/doi/10.1145/3442188.3445922>
- Bowen, M. &. (2009). MANAGEMENT OF BUSINESS CHALLENGES AMONG SMALL AND MICRO ENTERPRISES IN NAIROBI-KENYA. *KCA JOURNAL OF BUSINESS MANAGEMENT*( ISSUE 1), pp. 16-31.
- Bowman, S. R. (2020). *Communication between cultures: Non-verbal communication* (2 ed.). Routledge.
- Brill., D. G. (2024). *Artificial intelligence, culture, and communication: Intercultural perspectives on meaning-making and power relations*.
- Brown, T. (2009). *Change by design: How design thinking creates new alternatives for business and society*. Harvard Business Press.
- Burgoon, J. K., Guerrero, L., & Floyd, K. (2016). *Nonverbal communication*. Routledge.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Multilingual Matters.
- Carlile, P. R. (2004). *Transferring, translating, and transforming knowledge*. Organization Science.
- Castells, M. (2010). *The rise of the network society* (2nd. ed.). Wiley-Blackwell.
- Cherry, C. (1957). *On human communication*. MIT Press.
- Chesbrough, H. (2003). *Open innovation: The new imperative for creating and profiting from technology*. . Harvard Business School Press.
- Christensen, C. M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail*. Harvard Business School Press.
- Circelli, R. (2025). *The best AI search engines 2026*. PCMag.

- Clark, A. (2008). *Supersizing the mind: Embodiment, action, and cognitive extension*. Oxford University Press.
- Clark, H. H. (1996). *Using language*. Cambridge University Press.
- Cornelissen, J. P. (2005). *Beyond compare: Metaphor in organization theory* (Vol. 30 (4)). *Academy of Management Review*.
- Cornelissen, J. P. (2012). *Sensemaking under pressure*. (Vol. 33(1)). *Organization Studies*.
- Cowan, R., David, P. A., & Foray, D. (2000). *The explicit economics of knowledge codification*. (Vol. 9(2)). *Industrial and Corporate Change*.
- Crosswhite, J. (1996). *The rhetoric of reason: Writing and the attractions of argument*. University of Wisconsin Press.
- Dai, D. W., & Hua, Z. (2024). *When AI meets intercultural communication: New frontiers, new agendas*. *Applied Linguistics Review*.  
doi:<https://www.degruyterbrill.com/document/doi/10.1515/applirev-2024-0185/html>
- Dakan, R. &. (2026). *Framework for AI Fluency (Practical Summary Document)* (Version 1.1 ed.). Retrieved from <https://ringling.libguides.com/ai/framework>
- Deardorff, D. K. (2006). *Identification and assessment of intercultural competence*. *Journal of Studies in International Education*,. Retrieved from <https://doi.org/10.1177/1028315306287002>
- Evans, V., & Green, M. (2006). *Cognitive linguistics: An introduction*. Edinburgh University Press.
- Fagerberg, J. (2005). *Innovation: A guide to the literature*. Oxford University Press.
- Fairclough, N. (1995). *Critical discourse analysis: The critical study of language*. Longman.
- Fauconnier, G., & Turner, M. (2002). *The way we think: Conceptual blending and the mind's hidden complexities*. Basic Books.
- Floridi, L., Cowls, J., Beltrametti, M., & al., e. (2018). *AI4People—An ethical framework for a good AI society*. (Vol. 28(4)). *Minds and Machines*.
- Garud, R., Dunbar, R., & Bartel, C. A. (2011). *Dealing with unusual experiences*. *Organization Science*.
- Garud, R., Gehman, J., & Giuliani, A. P. (2014). *Contextualizing entrepreneurial innovation*. (Vol. 39(4)). *Academy of Management Review*.
- Gentner, D. (1983). *Structure-mapping: A theoretical framework for analogy*. (Vol. 7(2)). *Cognitive Science*. Retrieved from [https://onlinelibrary.wiley.com/doi/10.1207/s15516709cog0702\\_3](https://onlinelibrary.wiley.com/doi/10.1207/s15516709cog0702_3)
- Godin, B. (2008). *The History of a Category*. Project on the Intellectual History of Innovation. doi:[https://espace.inrs.ca/id/eprint/10023/1/Godin\\_2008.pdf](https://espace.inrs.ca/id/eprint/10023/1/Godin_2008.pdf)
- Grice, H. P. (1975). *Logic and conversation* (In P. Cole & J. L. Morgan (Eds.) ed., Vol. Syntax and semantics: Vol. 3. Speech acts). Academic Press.
- Hall, E. T. (1976). *Beyond culture*. Anchor Books.
- Halliday, M. A. (1978). *Language as social semiotic*. Edward Arnold.
- Hayles, N. K. (2012). *How we think: Digital media and contemporary technogenesis*. University of Chicago Press.
- Heath, C., & Heath, D. (2007). *Made to Stick: Why some ideas survive and others die*. New York: NY: Random House.
- Hutchins, E. (1995). *Cognition in the wild*. MIT Press.
- Hyland, K. (2005). *Metadiscourse*. Continuum.
- Johnson, M. (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason*. University of Chicago Press.

- Kennedy, G. A. (1991). *Aristotle on rhetoric: A theory of civic discourse*. Oxford University Press.
- Kövecses, Z. (2010). *Metaphor: A practical introduction* (2nd ed.). Oxford University Press.
- Krasadakis G., N. R. (2021). 60 Leaders on Innovation. Retrieved from <https://www.60leaders.com/>
- Krasadakis, G. (2022). *0 leaders on artificial intelligence: Insights, reflections, and lessons for the future*. Kogan Page Ltd.
- Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
- Kristeva, J. (1980). *Desire in language: A semiotic approach to literature and art*. Columbia University Press.
- Lakoff, G. (1993). *The contemporary theory of metaphor*. (Vols. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed.)). Cambridge University Press.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago Press.
- Lanham, R. (2006). *The Economics of Attention: Style and Substance in the Age of Information*. University of Chicago Press.
- Lapum, J. L., St-Amant, O., Hughes, M., & Garmaise, J. (2020). *Communication for the nursing professional*. Retrieved from Toronto Metropolitan University Pressbooks: <https://pressbooks.library.torontomu.ca/communicationnursing/part/introduction-therapeutic-communication/>
- Levinson, S. C. (1983). *Pragmatics*. Cambridge University Press.
- Littlejohn, S. W., & Foss, K. A. (2009). *Theories of human communication* (9th ed.). Wadsworth.
- Liu, P., Yuan, W., Fu, J., Jiang, Z., Hayashi, H., & Neubig, G. (2023). *Pre-train, prompt, and predict: A systematic survey of prompting methods in natural language processing*. (Vol. 55(9)). ACM Computing Surveys.
- Lounsbury, M., & Glynn, M. A. (2001). *Cultural entrepreneurship*. Strategic Management Journal.
- Manovich, L. (2001). *The language of new media*. MIT Press.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). *An integrative model of organizational trust*. (Vol. 20(3)). Academy of Management Review.
- McKinsey C. (2021). The Eight Essentials of Innovation.
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. McGraw Hill.
- Miao, C. &. (2018). *Humanized Artificial Intelligence: What, why and how*. International Journal of Information Technology.
- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). *Digital innovation management* (Vol. 41(1)). MIS Quarterly.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company*. Oxford University Press.
- OpenAI. (2025). ChatGPT response to author's prompt on language and innovation [Large language model]. Online.
- Orlikowski, W. J., & Scott, S. V. (2015). *Digital work* (Vol. 36(7)). Organization Studies.
- Pease, A. &. (2019). *The definitive book of body language: How to read others' attitudes by their gestures*. Orion .
- Perelman, C., & Olbrechts-Tyteca, L. (1969). *The new rhetoric: A treatise on argumentation*. University of Notre Dame Press.
- Pisano, G. P. (2019). *The Hard Truth About Innovative Cultures*. Harvard Business Review.

- Qian, Y. (2023). Prompt Engineering in Education: A Systematic Review of Approaches and Educational Applications. *Computers & Education: Artificial Intelligence*. Retrieved from <https://journals.sagepub.com/doi/abs/10.1177/07356331251365189>
- Reynolds, L., & McDonell, K. (2021). *Prompt programming for large language models: Beyond the few-shot paradigm*. <https://arxiv.org/abs/2102.07350>.
- Rogers, E. M. (1986). *Communication technology: The new media in society*. Free Press.
- Romer, P. M. (1990). *Endogenous technological change* (Vol. 98(5)). *Journal of Political Economy*.
- Sarwari, A. Q., Javed, M. N., Adnan, H. M., & Wahab, M. N. (2024). *Assessment of the impacts of artificial intelligence (AI) on intercultural communication among postgraduate students in a multicultural university environment* (Article 13849 ed.). *Scientific Reports*. doi:<https://doi.org/10.1038/s41598-024-13849-x>
- Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 4th ed.). Jossey-Bass.
- Schumpeter, J. A. (1934). *The theory of economic development*. Harvard University Press.
- Searle, J. R. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge University Press.
- Seaver, N. (2017). *Algorithms as culture* (Vol. 4(2)). *Big Data & Society*.
- Seaver, N. (2017). *Algorithms as culture: Some tactics for the ethnography of algorithmic systems*. (Vol. 4(2)). *Big Data & Society*. Retrieved from <https://journals.sagepub.com/doi/10.1177/2053951717738104>
- Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. University of Illinois Press.
- Shanon, C. (1948). *Bell System Technical Journal, A mathematical Theory of Communication*, (Vol. 27).
- Suchman, L. (1987). *Plans and situated actions: The problem of human-machine communication*. Cambridge University Press.
- Tang, K.-S. (2025). *I-textuality: Expanding intertextuality to theorize human–AI interaction with generative artificial intelligence*. *Applied Linguistics*. Advance online publication. doi:<https://academic.oup.com/applij/advance-article/doi/10.1093/applin/amaf016/8116680?login=false>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). *Dynamic Capabilities and Strategic Management*. Retrieved from [https://sms.onlinelibrary.wiley.com/doi/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](https://sms.onlinelibrary.wiley.com/doi/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z)
- Tidd, J., & Bessant, J. (2020). *Managing innovation: Integrating technological, market and organizational change* (Vol. 7th). Wiley.
- Ting-Toomey, S. (1999). *Communicating across cultures*. Guilford Press.
- Toulmin, S. E. (2003). *The Uses of Argument*. Cambridge University Press.
- Trager, G. L. (1958). *Paralanguage: A first approximation*. (Vol. 13). *Studies in Linguistics*. Retrieved from <https://scispace.com/papers/paralanguage-a-first-approximation-2qu00gr26y>
- Tujela, P. (2019). *Intercultural communication for global business*. Routledge.
- Turchin, V. F. (1977). *The phenomenon of science: A cybernetic approach to human evolution*. Columbia University Press.
- UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. UNESCO. doi:<https://unesdoc.unesco.org/ark:/48223/pf0000380455>
- University of Illinois Springfield. (n.d). *What is rhetoric?* University of Illinois Springfield.

- Valencia, S., Cave, R., Kallarakal, K., Seaver, K., Terry, M., & Kane, S. K. (2023). *The less I type, the better*: How AI Language Models can Enhance or Impede Communication for AAC Users. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW2), Article 401. Retrieved from <https://dl.acm.org/doi/epdf/10.1145/3544548.3581560>
- Van Dijck, J. (2013). *The culture of connectivity*. Oxford University Press.
- Verganti, R. (2009). *Design-driven innovation: Changing the rules of competition by radically innovating what things mean*. Harvard Business Press.
- von Hippel, E. (2005). *Democratizing innovation*. MIT Press.
- Watzlawick, P. &. (1967). *Pragmatics of human communication*. W. W. Norton & Company.
- White, J., Fu, Q., Hays, S., Sandborn, M., Olea, D., Gilbert, H., . . . Schmidt, D. C. (2023). *A prompt pattern catalog to enhance prompt engineering with large language models*. arXiv preprint arXiv:2302.11382.
- Yang, S., Zhao, H., & Luo, W. (2024). *The impact of artificial intelligence on intercultural communication*. In *Understanding multiculturalism and interculturalism in cross cultures*. IntechOpen. doi:<https://doi.org/10.5772/intechopen.1006172>
- Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). *The new organizing logic of digital innovation: An agenda for information systems research*. (Vol. 21(4)). Information Systems Research. doi:<https://pubsonline.informs.org/doi/10.1287/isre.1100.0322>
- Young, S. (2025). *DeepSeek, ChatGPT and the global fight for tech supremacy*. Harvard Law Today. Retrieved from <https://hls.harvard.edu/today/deepseek-chatgpt-and-the-global-fight-for-technological-supremacy/>
- Zappen, J. P. (2005). *Digital rhetoric: Toward an integrated theory*. (Vol. 14(3)). Technical Communication Quarterly. Retrieved from [https://www.tandfonline.com/doi/abs/10.1207/s15427625tcq1403\\_10](https://www.tandfonline.com/doi/abs/10.1207/s15427625tcq1403_10)

### Author’s Statement:

I hereby expressly declare that, according to the article 8 of Law 1559/1986, this dissertation is solely the product of my personal work, does not infringe any intellectual property, personality and personal data rights of third parties, does not contain works/contributions from third parties for which the permission of the authors/beneficiaries is required, is not the product of partial or total plagiarism, and that the sources used are limited to the literature references alone and meet the rules of scientific citations.

## Appendix A

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Further research may involve comparative analyses between different LLMs, including systems such as Grok, Perplexity AI, Gemini, and Claude, to investigate differences in linguistic behavior, reasoning, semantics, interpretation, and prompt responsiveness. Involving further analysis across multiple AI systems could contribute to a broader understanding of AI-mediated communication and the evolving relationship between human cognition and generative AI.

The following table presents the most famous AI-powered search engines and conversational AI platforms as of early 2026. These systems utilize LLMs, generative AI, and conversational interfaces to provide answers, summaries, and interactive communication processes.

<b>Rank</b>	<b>AI Search Engine / Platform</b>	<b>Company / Organization</b>	<b>Main Characteristics</b>	<b>Primary Strength</b>
<b>1</b>	ChatGPT Search	OpenAI	Conversational AI with memory, web search integration, and contextual interaction	Natural dialogue and contextual continuity
<b>2</b>	Gemini / AI Overviews	Google	AI-integrated search ecosystem with generative summaries	Speed, scale, and search integration
<b>3</b>	Perplexity AI	Perplexity AI	Citation-based conversational research engine	Research accuracy and transparency
<b>4</b>	Doubao	ByteDance	Multimodal AI platform popular in Asian markets	Multimodal interaction
<b>5</b>	Microsoft Copilot	Microsoft	AI assistant integrated into Windows and Microsoft Office	Enterprise productivity
<b>6</b>	You.com	You.com	Customizable AI workspace and search assistant	Creator and business workflows
<b>7</b>	Brave Search + Leo	Brave	Privacy-oriented AI search engine	Privacy and independent indexing
<b>8</b>	Komo AI	Komo	Conversational and community-oriented AI search	Minimalist and privacy-focused interaction
<b>9</b>	Quark AI	Alibaba	Mobile-first AI assistant with document capabilities	Document and productivity integration
<b>10</b>	Arc Search / Emerging Platforms	Various companies	Browser-integrated and experimental AI search systems	Innovative user interaction

Appendix A: 1

Future research could expand on this study through a comparison of other LLMs, particularly Grok and Perplexity AI. These platforms provide insights into differences in reasoning patterns, prompt responsiveness, contextual interpretation, and communicative behavior across AI systems. This broader approach contributes to the understanding of AI-mediated communication and the ways generative AI constructs meaning through human interaction.

## A1. Grok Question 1: How Does an Innovative Company Differentiate?

### **Grok response:**

#### Academic Output

“Innovative companies differentiate themselves through a multifaceted approach centered on value creation, strategic positioning, and adaptive capabilities. Drawing on Porter’s (1985) framework of competitive strategy, differentiation arises from unique offerings that command premium value. This is further enriched by Doblin’s Ten Types of Innovation (2013), which emphasizes that sustainable differentiation stems not only from product innovation but also from business model, process, network, and customer experience innovations. Teece’s (2010) dynamic capabilities theory underscores the importance of sensing opportunities, seizing them through resource reconfiguration, and transforming organizational structures to maintain competitive advantage in turbulent markets. Ultimately, differentiation emerges as an integrated outcome of technological leadership, cultural agility, and ecosystem orchestration.”

#### Business Output

“Innovation isn’t just about cool products—it’s how you win in the market. An innovative company differentiates by obsessing over customer problems, moving faster than competitors, and constantly reinventing its business model. It combines breakthrough technology with smart operations, a culture that rewards bold ideas, and the ability to build platforms or ecosystems others want to join. Differentiation happens when you deliver superior value that customers notice, can’t easily copy, and are willing to pay for—turning innovation into a repeatable competitive edge rather than a one-time event.”

<b>Dimension</b>	<b>Academic Response</b>	<b>Business Output (CEO-style)</b>
<b>Tone</b>	Formal, analytical	Conversational, motivational
<b>Structure</b>	Theory-driven, structured	Practice-oriented, direct
<b>Focus</b>	Frameworks, models, and theoretical foundations	Actionable strategies and real-world execution
<b>Innovation view</b>	Systemic and multi-dimensional	Pragmatic, customer-obsessed, and implementation-focused
<b>Time</b>	Long-term strategic	Immediate and iterative
<b>Communication model</b>	Informational/linear with academic citations	Direct, persuasive, and relatable
<b>Style</b>	Impersonal, objective	Humanized, energetic, and practical

Appendix A: 2

Comparison:

The academic response gives emphasis to the innovation through a structured and theoretical framework, emphasizing concepts like positioning, dynamic capabilities, competitive advantage, and ecosystem orchestration. It also involves academic references and analytical terminology to explain how innovative companies differentiate themselves based on the organizational processes and long-term strategic development. On the other hand, the business response has a practical, direct, and market-oriented approach, focusing more on theoretical models with emphasis on customer problems, speed, adaptability, operational execution, and real-world competitive behavior. So, this comparison demonstrates how academic discourse prioritizes conceptual analysis and theoretical explanation, while business communication focuses on action, experiential understanding, and pragmatic language that enables innovative processes.

## A2. Perplexity Question 1: How Does an Innovative Company Differentiate?

### **Perplexity response:**

#### Academic Output

“An innovative company differentiates academically through first-mover advantages and resource-based competitive edges. By systematically developing novel, useful products, services, or business models, it creates unique value propositions unavailable to competitors. This differentiation stems from an organizational culture that prioritizes innovation, leadership, and strategic vision, enabling proactive trend anticipation rather than reactive responses. Academically, such firms achieve sustainable competitive advantage by transforming creative ideas into market solutions that increase customer appeal while raising imitation barriers through proprietary knowledge, technological capabilities, and dynamic organizational routines.”

#### Business Output

“An innovative company differentiates in business by delivering unique customer value through breakthrough products, services, or business models that competitors cannot easily replicate. It leverages proprietary technology and speed-to-market to capture market share before rivals respond. Business differentiation occurs via premium pricing (customers pay more for novelty), enhanced customer experience, and operational efficiency that lowers costs while improving quality. Companies like Apple and Tesla exemplify this by integrating design, technology, and brand to create ecosystems that lock in customers. Ultimately, innovation drives revenue growth, market leadership, and profit margins that financially outperform industry peers.”

<b>Dimension</b>	<b>Academic Response</b>	<b>Business Output</b>
<b>Tone</b>	Formal, analytical	Confident, practical
<b>Structure</b>	Theory-driven, structured	Direct, concise
<b>Focus</b>	Competitive advantage, innovation theory, differentiation logic	Customer value, market share, profitability
<b>Innovation view</b>	Systemic, long-term, research-based	Applied, execution-oriented, growth-focused
<b>Time horizon</b>	Long-term strategic positioning	Short-term results with iterative improvement
<b>Communication model</b>	Informational and evidence-based	Persuasive and action-oriented
<b>Style</b>	Objective, impersonal	Energetic, executive-friendly

Appendix A: 3

Comparison:

The academic response uses formal language, theoretical framing, and long-term strategic thinking to explain innovation as a source of competitive advantage. In contrast, the business version has a direct, practical, and persuasive focus, giving emphasis on customer value, market share, and profitability. While the academic style highlights concepts such as proprietary capabilities and sustainable differentiation, the business style emphasizes execution, speed, and measurable results.

### A3. Comparison of Grok & Perplexity

Comparison:

<b>Dimension</b>	<b>Grok</b>	<b>Perplexity AI</b>
<b>Academic Tone</b>	Highly theoretical and research-oriented	Formal but more concise and simplified
<b>Business Tone</b>	Conversational, motivational, and narrative	Executive-oriented, practical, and concise
<b>Structure</b>	Expands ideas with detailed theoretical explanation	More compact and result-focused structure
<b>Theoretical References</b>	Explicitly references Porter, Doblin, and Teece	Uses broader innovation and competitive advantage concepts
<b>Focus in Academic Output</b>	Dynamic capabilities, ecosystem orchestration, adaptive structures	Resource-based advantage, leadership, proprietary knowledge
<b>Focus in Business Output</b>	Customer obsession, reinvention, culture, ecosystems	Market share, profitability, premium pricing, execution
<b>Communication Style</b>	Humanized and descriptive	Direct and informational
<b>Language Complexity</b>	More sophisticated academic vocabulary	Simpler and more accessible language
<b>Innovation Perspective</b>	Innovation as systemic and multidimensional	Innovation as strategic and performance-driven
<b>Strategic Orientation</b>	Long-term adaptability and organizational transformation	Competitive positioning and measurable business outcomes
<b>Persuasive Elements</b>	Emphasizes culture, speed, and experimentation	Emphasizes financial growth and market leadership
<b>Overall Characteristic</b>	More rhetorical, expansive, and discursive	More concise, structured, and business-efficient

Appendix A: 4

The comparison between Grok and Perplexity AI highlight significant differences in rhetorical formulation, communicative style, and meaning construction within AI-generated responses. Specifically, Grok tends to produce more expansive and academically enriched outputs, integrating academic frameworks and descriptive language that create a humanized communication style. The responses emphasize adaptive capabilities, ecosystem thinking, and organizational transformation, reflecting a broader conceptual interpretation of innovation.

On the other hand, Perplexity AI generates more structured responses with clearer emphasis on strategic execution, customer value, profitability, and measurable business outcomes. While still has an academic tone in the scholarly output, Perplexity simplifies theoretical explanations and adopts a more direct communicative approach. These differences illustrate how distinct LLMs construct meaning through varying rhetorical strategies, linguistic structures, and contextual priorities within AI-mediated communication.