Hybrid cognitive authority and algorithmic subjectivity: rethinking knowledge management in AI-driven communication

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Abstract

Purpose – *This paper aims to explore the transformative impact of generative artificial intelligence (AI) and human-computer interaction (HCI) on knowledge management in business, focusing on how AI-driven communication reshapes organizational practices. It examines the role of HCI in designing user-centric AI tools and introduces Hybrid Cognitive Authority (the co-construction of knowledge between human and AI agents) and Algorithmic Subjectivity (AI-generated communication simulating intent without cognition) to evaluate their effects on decision-making, knowledge flows and ethical governance in commercial settings.*

Design/methodology/approach – *A mixed-methods approach integrates interdisciplinary genealogical analysis, qualitative case studies and critical discourse analysis. The study traces the evolution of commercial communication from mid-20th-century pragmatics to AI-mediated paradigms, synthesizing insights from cognitive science, information systems and digital epistemology. Five case studies of AI and HCI applications in business (e.g. customer service, recruitment) and discourse analysis of AI-generated artifacts provide empirical evidence for assessing knowledge management outcomes.*

Findings – *Generative AI, supported by HCI, enhances knowledge management by improving efficiency and scalability, but raises challenges related to transparency, algorithmic bias and accountability. Empirical cases demonstrate how hybrid human-AI systems optimize knowledge processes while highlighting ethical risks, such as biased outputs. The proposed framework of Hybrid Cognitive Authority and Algorithmic Subjectivity necessitates governance models that balance AI automation with human oversight to maintain trust and interpretive agency.*

Originality/value – *Unlike prior studies that view AI as a passive tool, this research positions AI as an active knowledge co-constructor, advancing knowledge management scholarship through the novel concepts of Hybrid Cognitive Authority and Algorithmic Subjectivity. It bridges theory and practice by offering actionable strategies for businesses to leverage AI and HCI responsibly, contributing to economic efficiency, ethical governance and societal trust in AI-driven communication.*

Keywords *Knowledge management, Generative AI, Hybrid cognitive authority, Algorithmic subjectivity, Human-computer interaction, Business communication, Ethical governance, Digital epistemology*

Paper type *Research paper*

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1. Introduction

The rapid integration of generative artificial intelligence (AI) and human-computer interaction (HCI) into business communication has profoundly transformed knowledge management, compelling organizations to reassess how knowledge is created, shared, and governed in AI-driven environments (Korczak and Pawełoszek, 2023). This study explores the evolving intellectual landscape of commercial communication, examining how AI and HCI challenge traditional paradigms grounded in pragmatics, cognitive science and social

psychology (Heller and Brown-Schmidt, 2023). Unlike earlier models, such as speech act theory, which framed communication as a linear exchange between intentional human actors (Austin, 1962; Searle, 1969), AI introduces nonhuman agents that simulate intent through probabilistic models, while HCI ensures these technologies align with user needs through intuitive, user-centered design (Norman, 2002).

Central to this transformation are pivotal questions: How do AI and HCI reshape meaning-making and decision-making in business contexts? What are the implications of nonhuman agents for knowledge management and ethical governance? To address these, this paper proposes Hybrid Cognitive Authority and Algorithmic Subjectivity as a novel framework, positioning AI as an active co-constructor of knowledge rather than a passive tool. By tracing the genealogical evolution from mid-20th-century pragmatics to AI-mediated communication, this study illuminates the interplay of human cognition, technological innovation and HCI design, offering actionable insights for businesses, educators and policymakers (Bender *et al.*, 2021; Stenning *et al.*, 2006).

The late 20th-century cognitive turn, fueled by Cold War-era investments in AI and computing, marked a critical shift toward exploring internal mental architectures. Over time, commercial communication has evolved, hybridized, and expanded through new perspectives from social psychology, cognitive science, HCI, and, most recently, generative AI, which increasingly mediates organizational interactions (Xu *et al.*, 2024a). The rise of HCI in the 1990s, alongside the internet's commercialization, redefined communication as a user-centered, technologically mediated process. Cognitive science has enriched this evolution by uncovering the cognitive and cultural dimensions of communication practices (Mehler, 2001), while HCI has introduced user-centered design principles that prioritize seamless human-machine interaction, reshaping organizational communication (Stenning *et al.*, 2006). Concurrently, the rapid adoption of generative AI has blurred the boundaries of agency, necessitating new theoretical frameworks to understand interactions between human actors and algorithmic systems (Levinson, 2012; Xu *et al.*, 2024b). This adoption varies across organizations, influenced by differing levels of technology readiness, which shapes the digital divide and socio-economic dynamics in AI-driven communication environments (Magliocca *et al.*, 2025).

These developments raise enduring yet evolving questions: How do individuals negotiate meaning in business contexts, and what does it mean to act, speak, and understand language in systems incorporating nonhuman agents? As knowledge-production paradigms shift, so too do assumptions about the communicative subject. Generative AI, particularly large language models, exemplifies this shift by generating marketing content, responding to customer inquiries, and offering strategic guidance (Sun *et al.*, 2024). These advancements challenge traditional theories of cognition and communication by integrating probabilistic models into human-centric frameworks (Bender *et al.*, 2021; Stenning *et al.*, 2006). This moment demands a genealogical reflection – a critical exploration of the concepts, practices and interdisciplinary currents that have shaped commercial communication research. As Boden (2006) argues, understanding the historical trajectories of cognitive science provides clarity on how interdisciplinary paradigms converge to redefine modern communication.

This reflection is not merely academic; it is a practical imperative. Business schools, as hubs of management education, must prepare future leaders for a world where collaborators may be algorithmic agents. This requires an expanded curriculum that integrates the cultural dimensions of cognitive science and emphasizes the co-construction of meaning in human and technological systems (Cole, 2003). Recognizing the constructed nature of our knowledge fields reveals the contingency and contestation underlying dominant methods and assumptions. It underscores the intricate interplay of linguistics, psychology, cognitive science and informatics – a matrix of expertise that shapes our understanding of people, words, and choices in the marketplace. These transformations

highlight the need for interdisciplinary collaboration, as Stenning, Calder, and Lascarides (2006) advocate, to address the complex challenges posed by generative AI and evolving communication technologies.

This article unfolds in four stages to chart this genealogy. First, it examines the foundational role of pragmatics and speech act theory in shaping early conceptions of commercial communication and their assumptions about language users. Austin (1962) and Searle (1969) established communication as a performative act that shapes social realities, portraying communicative subjects as rational agents with clear intentions.

Second, it explores how social psychology and cognitive science enriched these foundations, offering a more nuanced understanding of meaning-making and decision-making in organizations. The introduction of cognitive science shifted focus to mental processes such as memory, perception, and decision-making, while social psychology highlighted the influence of group dynamics and social contexts on business communication (Fiske, 2004; Gilovich *et al.*, 2018). This marked a departure from earlier models, which often overlooked emotional and contextual factors.

Third, it analyzes the digital era's convergence with HCI, recasting communicative subjects as users navigating technologically mediated interactions. The rise of digital platforms necessitated a new understanding of communication in mediated spaces, with HCI research emphasizing interface design, usability, and the role of technology in shaping meaning-making (Norman, 2002). As businesses increasingly rely on digital interfaces, communication is shaped by user experiences with technology, demanding a new lens for analysis.

Finally, it assesses the rise of generative AI as a paradigmatic shift that challenges notions of rational human agency, prompting a reevaluation of what it means to communicate with probabilistic machine models (Bender *et al.*, 2021). Large language models like GPT-4o and DeepSeek generate content, engage in dialogue, and provide strategic insights, blurring the lines between human and machine communicators. This raises critical questions about authenticity, agency and intent in business communication.

By synthesizing these stages, this study transcends a mere historical narrative, illuminating the cumulative transformations that have shifted communication from human-driven exchanges to a landscape where technological agents both facilitate and generate novel forms of interaction. It equips scholars, educators, and practitioners with an analytical toolkit to question established boundaries and envision the future of commercial communication. The stakes are significant: as generative AI assumes greater authority in corporate discourse, our interpretive and ethical frameworks must evolve. As Škovrlj (2019) argues, AI's growing influence demands a reconsideration of ethical structures to ensure accountability and transparency in communication.

The journey ahead reveals how the history of commercial communication is, at its core, a history of the human sciences and their evolving, now machine-augmented, visions of language, cognition, and agency. Table 1 is a glossary of key terms used throughout the manuscript.

2. The foundations in pragmatics: early conceptualizations of commercial communication (mid-20th century–late 20th century)

2.1 Influence of pragmatics on early commercial communication

The mid-20th century marked a pivotal era in the evolution of commercial communication, characterized by the incorporation of classical pragmatics into business discourse analysis. This integration coincided with postwar economic globalization, as multinational corporations sought standardized frameworks to navigate cross-cultural negotiations and marketing strategies. Foundational to this integration were the seminal contributions of J.L.

Table 1 Glossary of key terms

Term	*Definition*
Algorithmic subjectivity	A concept describing the emergent agency of generative AI systems that operate via probabilistic models and data-driven methods, thereby mimicking human subjectivity without possessing genuine consciousness, intentionality or moral reasoning (Bender *et al.*, 2021; Kordzadeh and Ghasemaghaei, 2022)
Hybrid cognitive authority	Refers to the collaborative process by which human expertise and AI-generated outputs jointly construct meaning and negotiate authority within decision-making processes (Vannesluoma, 2024; Foucault, 1988)
Probabilistic model	A mathematical framework that employs statistical principles and probability distributions to identify patterns in data and generate predictions or outputs, commonly used in AI for tasks such as language generation and pattern recognition (Bishop, 2006)
Generative AI	An artificial intelligence system that leverages deep learning and extensive data training to produce coherent, contextually appropriate content (e.g. text or images), relying on statistical patterns rather than on human-like understanding (Bender *et al.*, 2021; Baesens, 2023)
Pragmatics	A branch of linguistics focused on how context, speaker intentions, and social interactions influence the production, transmission and interpretation of meaning in language (Austin, 1962; Searle, 1969)
Speech act theory	A theoretical framework that examines how language functions performatively – that is, how utterances can constitute actions (e.g. promising, commanding, apologizing) rather than merely conveying information (Austin, 1962; Searle, 1969)
Social psychology	A discipline that investigates how individuals' thoughts, feelings, and behaviors are shaped by social interactions, group dynamics and contextual factors (Gilovich, Keltner, Chen, and Nisbett, 2018; Fiske, 2004)
Cognitive dissonance theory	A theory describing the psychological discomfort experienced when individuals encounter conflicting beliefs or information, leading them to take steps to restore cognitive consistency (Festinger, 1957)
Information ethics	An area of ethical inquiry that examines the moral issues involved in the creation, dissemination, and use of digital information, emphasizing transparency, accountability and fairness in managing digital systems (Škovrlj, 2019)
Large language model (LLM)	A deep learning-based language model that is trained on vast corpora of text data to generate coherent and contextually relevant outputs, forming the backbone of many generative AI systems (Bender *et al.*, 2021)
Algorithmic bias	The systematic bias in AI outputs that arises from limitations in data or design flaws, potentially leading to unfair or discriminatory outcomes (Kordzadeh and Ghasemaghaei, 2022)

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Austin and John Searle, whose speech act theory fundamentally reshaped our understanding of language use within organizational contexts. Austin's (1962) distinction between locutionary, illocutionary and perlocutionary acts provided a nuanced framework for dissecting the multifaceted nature of communication beyond mere utterances. Searle (1969) extended these ideas by formalizing the classification of speech acts and elucidating their functional roles in social interactions. The postwar emphasis on rationality and efficiency in business practices dovetailed with speech act theory's focus on intentionality and goal-oriented communication. The concepts introduced by Austin and Searle fundamentally transformed the perception of communicative acts within

organizations, setting the stage for an interdisciplinary approach that integrated linguistic, cognitive and social theories into the study of business communication.

In business settings, pragmatics-driven approaches illuminated the performative aspects of communication, particularly in negotiation, advertising discourse, and leadership communication. Negotiation was reconceptualized not simply as an exchange of propositions but as a series of speech acts aimed at achieving mutual understanding and agreement. Advertising discourse was analyzed through the lens of speech acts that performed actions such as persuading, informing and entertaining consumers. Leadership communication was scrutinized for its capacity to enact authority, inspire trust and mobilize organizational members through the strategic deployment of language. These insights transformed business communication from a passive exchange of information into an active process of constructing meaning and shaping outcomes (Austin, 1962; Searle, 1969).

Underlying these pragmatic models was an implicit assumption regarding the speaker–listener relationship, envisaging it as a cooperative, goal-oriented interaction. Within this framework, the human subject was portrayed as a rational agent capable of intentional language use to effectuate desired outcomes. This perspective underscored the belief that clear and deliberate communication is a cornerstone of effective business practice, reinforcing a human-centric view of communication dynamics (Austin, 1962; Searle, 1969).

2.2 Integration of social psychology

As the pragmatics-driven understanding of business communication matured, it increasingly intersected with insights from social psychology, enriching the theoretical landscape with concepts that delved into the cognitive and social underpinnings of interpersonal interactions. This infusion shifted the focus from purely linguistic structures to the psychological states and social contexts that influence communicative behaviors within organizations. Key social psychological constructs – such as attitudes, cognitive dissonance and impression management – became integral to analyzing how individuals perceive, interpret, and respond to communicative exchanges in business settings. For example, attitudes were examined for their role in shaping individuals' receptiveness to persuasive messages in advertising and negotiation. Cognitive dissonance theory (Festinger, 1957) provided a framework for understanding the discomfort individuals experience when confronted with conflicting information or expectations, thereby influencing their strategies to restore cognitive equilibrium. This approach illuminated how communication strategies in advertising or negotiation could be used not only to persuade but also to manage cognitive tensions among stakeholders.

Impression management, as articulated by Goffman (1959), highlighted the strategic presentation of the self in organizational settings, where individuals consciously manipulate their communicative behavior to create desired perceptions among colleagues, superiors and clients. This concept underscored the complexity of effective communication by recognizing that it involves not merely the transmission of information but also the cultivation of particular identities and reputations within the organizational hierarchy. Goffman's work remains fundamental to understanding how individuals manage perceptions in organizational contexts, particularly in leadership and negotiation (Goffman, 1959). Moreover, the integration of social psychology introduced a critical examination of power relations and organizational roles, revealing how these dynamics shape – and are shaped by – communication practices. Effective communication increasingly came to be understood as a function of navigating interpersonal power structures, negotiating roles, and managing organizational hierarchies, thereby highlighting its inherently social and political dimensions (Goffman, 1959).

Synthesizing pragmatics with social psychological theories thus evolved the study of commercial communication into a more comprehensive, interdisciplinary field. This integration paved the way for deeper exploration of how language operates within the intricate web of human cognition and social interaction, thereby laying the groundwork for subsequent advances in understanding communication in digital and AI-enhanced business environments.

2.3 Rupture and continuity: the contested legacy of pragmatics in the age of algorithmic mediation

The foundational role of pragmatics in shaping commercial communication, as traced in the preceding sections, reveals a dynamic interplay of linguistic, cognitive, and social theories, enriched by social psychological insights. Yet, the historical trajectory of pragmatics is neither linear nor unproblematic. In the early 21st century, the rise of generative artificial intelligence (AI) introduces profound epistemological challenges to the assumptions underpinning classical pragmatics, particularly its reliance on intentional human agency. Drawing on Michel Foucault's concept of historical "rupture," this section interrogates the contested legacy of pragmatics in an era of algorithmic mediation. It examines how AI-driven systems disrupt traditional notions of meaning-making, while simultaneously coexisting with and reviving earlier theoretical frameworks. By foregrounding paradoxes, resistances, and reconfigurations, this analysis challenges narratives of seamless progress and sets the stage for exploring the broader reconfiguration of commercial communication through cognitive science and human-computer interaction in Section 3.

2.3.1 The paradox of intentionality: pragmatics in the shadow of AI. At the heart of classical pragmatics lies the assumption that language derives its meaning from intentional human action. Austin's (1962) speech act theory, for example, hinges on the speaker's capacity to perform illocutionary acts – such as promising, commanding or apologizing – rooted in conscious intent. Yet generative AI systems, such as GPT-4, destabilize this premise by producing linguistically coherent outputs that lack genuine intentionality. For instance, AI-driven customer service chatbots routinely generate apologies ("We regret the inconvenience") that mimic human speech acts but lack true accountability or emotional engagement (Bender *et al.*, 2021). This contradiction exposes a fundamental rupture: while pragmatics presupposes a rational human agent, AI reduces language to statistical correlations, thereby decoupling speech acts from their ontological grounding in human consciousness. This rupture echoes Foucault's (1996) analysis of epistemic shifts, whereby new "knowledge systems" displace prior frameworks. The rise of AI inaugurates a data-centric épistémè that redefines communication not as a dialogue between intentional subjects but as a computational process governed by pattern recognition. In commercial contexts, this shift is evident in tools such as automated contract generators, which encode Gricean maxims (e.g. relevance and clarity) as algorithmic rules while effectively erasing the human negotiator's role in navigating ambiguity or cultural nuance. The result is a tension between formal adherence to pragmatic principles and their existential evacuation – a paradox that underscores the nonlinear relationship between classical theories and their algorithmic reinterpretations (Grice, 1975; Bender *et al.*, 2021).

2.3.2 Coexistence and resistance: human pragmatics in algorithmic environments. Despite the ascendancy of AI, pragmatic practices persist in commercial communication and often coexist uneasily with algorithmic mediation. In cross-cultural business negotiations, for example, human actors continue to deploy indirect speech acts, politeness strategies and facework – techniques deeply rooted in Goffman's (1959) interactionist sociology – to navigate complex power dynamics. In Sino-American trade negotiations, human intermediaries may employ high-context communication to soften demands or signal flexibility, a tactic that AI systems, reliant on low-context, rule-based interpretations, struggle to replicate (Wang, 2005). This coexistence reveals a critical limitation of

algorithmic pragmatics: while AI can simulate transactional exchanges (such as drafting boilerplate agreements), it falters in contexts that require tacit knowledge, cultural fluency, or ethical judgment (Georgakopoulou and Spilioti, 2016). Such examples illustrate Foucault's argument that historical transitions are rarely totalizing; rather, older paradigms persist as "technologies of the self" (Foucault, 1988), resisting complete assimilation into new epistemic regimes. In organizational settings, employees often subvert AI-generated scripts by infusing them with performative gestures – such as emoticons or personalized anecdotes – to compensate for the perceived impersonality of machine-authored texts. These acts of resistance underscore the enduring relevance of social psychology and pragmatics, even as communication becomes increasingly mediated by algorithmic infrastructures.

2.3.3 Revival and reconfiguration: cognitive dissonance in the algorithmic age. Paradoxically, the ethical and practical challenges posed by generative AI have revived interest in mid-century social psychology frameworks, particularly Festinger's (1957) theory of cognitive dissonance. For example, corporations deploying AI for diversity-focused marketing campaigns often encounter dissonance when machine-generated messages – produced using historically biased data sets – clash with their stated commitments to inclusivity. Consumers, upon detecting discrepancies between algorithmic outputs and corporate values, experience mistrust that forces organizations to reintroduce human editors trained in dissonance-reduction strategies such as narrative reframing and symbolic gestures. This revival demonstrates that older theories are not rendered obsolete but are reconfigured to address new contradictions – a process Foucault might describe as the "reactivation" of dormant knowledge formations (Foucault, 1988; Festinger, 1957).

2.3.4 Toward a discontinuous genealogy. These examples collectively challenge the teleological narrative that commercial communication has progressed in a straight line from pragmatics to AI. Instead, they reveal a discontinuous landscape in which classical theories are simultaneously negated, hybridized, and reinvented. By applying Foucault's lens of historical rupture, the analysis underscores two key insights: first, the "intentional subject" central to pragmatics has not been transcended but rather displaced, its legacy persisting in the interstices of algorithmic systems; second, the power dynamics inherent in communication have shifted from human actors negotiating mutual understanding to algorithmic systems regulating what counts as "effective" discourse – a transition epitomized by the replacement of mid-century corporate "speech manuals" with AI-driven "optimization tools" that dictate conversational norms (Bender *et al.*, 2021). This discontinuous genealogy not only complicates linear historiography but also aligns with the History of the Human Sciences' emphasis on reflexive interdisciplinary inquiry. It invites scholars to interrogate how epistemic breaks reshape disciplinary boundaries – for instance, by forcing linguistics to confront its anthropocentric assumptions – and to explore the ethical implications of hybrid human–machine communication regimes. By situating generative AI within this fractured lineage, the analysis resists technological determinism and frames algorithmic mediation as one thread in an ongoing, contested renegotiation of what it means to communicate, act and be human.

This section has illuminated the nonlinear legacy of pragmatics in commercial communication through the lens of generative AI's emergence in the early 21st century, revealing epistemological ruptures and persistent human-centric practices. By examining AI's challenge to intentionality, its uneasy coexistence with pragmatic strategies, and the revival of social psychological frameworks, we have underscored the contested interplay between classical theories and algorithmic systems. This analysis serves as a prelude to Section 3, which explores the comprehensive impact of AI on commercial communication within the frameworks of cognitive science and human-computer interaction, extending from theoretical disruptions to practical transformations.

3. Reconfiguration through cognitive science and human-computer interaction (early 21st century)

Building on Section 2's critical analysis of generative AI's theoretical disruption to pragmatics, particularly its challenge to intentional human agency, this section systematically examines how AI reshapes commercial communication through the lenses of cognitive science and human-computer interaction (HCI). Spanning the late 20th century to the early 21st century, it explores the cognitive turn, the advent of digital tools, and AI's practical applications, offering a comprehensive perspective on the interplay between human cognition, technological innovation and communication practices. By integrating theoretical insights with empirical evidence, this section elucidates AI's transformative potential and ethical implications, distinctively advancing the discourse from pragmatic critique to interdisciplinary reconfiguration.

3.1 The cognitive turn and redefinition of commercial communication

The late 20th century heralded a paradigm shift in the study of commercial communication, driven by the cognitive turn within the human sciences. This shift was inseparable from the broader technological revolution of the 1970s–1990s, as advancements in computing and artificial intelligence (e.g. early expert systems) provided new metaphors for modeling human cognition. This interdisciplinary movement – encompassing psychology, linguistics, artificial intelligence, anthropology, and neuroscience – offered novel insights into language use, information processing, and decision-making within organizational contexts. Moving away from an exclusive focus on observable behaviors and external acts, the cognitive turn emphasized the internal mental processes that mediate these interactions (Sperber and Wilson, 1987).

One of the cognitive turn's central contributions was elucidating how metaphors, frames, and mental models shape strategic communication and managerial discourse. Lakoff and Johnson's (1980) exploration of metaphors revealed their role as cognitive tools that shape thought and behavior. In organizational contexts, metaphors such as "the company is a machine" versus "the company is an organism" lead to distinct management strategies and communication styles (Hodgkinson and Healey, 2008). Frames, as introduced by Entman (1993), further refine this analysis by providing cognitive structures that guide information interpretation and presentation. For example, framing corporate restructuring as "an opportunity for growth" rather than "a response to a crisis" can dramatically influence employee morale and external perceptions (Allard-Poesi, 1998). Similarly, mental models, as described by Johnson-Laird (1983), represent the internal structures individuals use to process information and anticipate outcomes; in business, these models influence how managers interpret trends, strategize, and set organizational goals.

Cognitive science also emphasized the concept of bounded rationality, introduced by Simon (1979), which highlights humans' limited capacity for processing information. This recognition led organizations to focus on heuristics as a means for efficient decision-making, thereby adapting communication strategies to ensure clarity and conciseness and improve organizational responsiveness (Bandura, 2001).

3.2 The advent of digital tools and human-computer interaction perspectives

The transition to the 21st century marked a proliferation of digital tools that transformed commercial communication. The rapid adoption of the internet in the 1990s catalyzed this transformation, as businesses sought to adapt communication practices to digital platforms. Tools such as email, instant messaging, and collaborative platforms revolutionized organizational workflows and interpersonal exchanges. Email, for instance, facilitated asynchronous communication by bridging temporal and geographic gaps; however, it also introduced challenges such as information overload and miscommunication, underscoring the need for efficient email strategies (Tanis and Beukeboom, 2011). Collaborative platforms like

Slack and Microsoft Teams further advanced real-time interaction by integrating functionalities such as file sharing, video conferencing, and project management, thereby streamlining workflows. This evolution reflects a broader shift in human-machine interaction, moving from rigid, Taylorist systems to human-centered approaches that prioritize user experience and adaptability in organizational communication (Scuotto *et al.*, 2024).

Human–computer interaction (HCI) emerged as a critical lens for analyzing the impact of these digital technologies on communication practices. HCI research emphasized the importance of user experience (UX) in tool design, advocating for intuitive and accessible interfaces (Butler and Senior, 2007). Key HCI concepts – such as feedback loops and affordances – further enhanced communication tools by fostering iterative learning and innovation while ensuring that digital tools aligned with user behaviors (Stenning *et al.*, 2006). Although digital tools democratized communication, they also introduced surveillance risks through built-in monitoring features, thereby necessitating ethical evaluations of power dynamics and privacy. In sum, the integration of HCI perspectives redefined communication by introducing digital modalities and reshaping organizational landscapes, thereby preparing businesses for subsequent advancements in generative AI and ongoing transformation.

3.3 Generative AI interventions and the shift in knowledge production paradigms (mid-21st century–present)

As the 21st century advanced, commercial communication entered a new frontier marked by the integration of generative artificial intelligence (AI) tools. Large language models (LLMs), such as GPT-based systems, represent a paradigm shift in how organizations generate and manage communicative content. Trained on vast corpora of text, these systems produce outputs that are coherent, contextually relevant and stylistically consistent. Their applications span a wide array of business functions, including automated customer support that provides round-the-clock responses, the creation of marketing copy tailored to individual consumer segments, and even strategic decision support that synthesizes market intelligence with organizational data (Ali Maatouk *et al.*, 2023).

The significance of generative AI lies not merely in its computational prowess but also in the epistemological implications it carries for communication. Whereas traditional paradigms emphasized the speaker's intent and the audience's interpretive capacities, generative AI reframes language production as a statistical process governed by algorithmic patterns. Meaning-making is no longer solely the product of human cognition and intentionality; it now emerges from probabilistic models that map linguistic inputs to likely outputs (Baesens, 2023). This shift challenges long-standing assumptions regarding "authentic" or "authoritative" communication in business contexts. For example, although AI-driven chatbots may appear empathetic or knowledgeable, their "understanding" is based on pattern recognition rather than genuine comprehension. These models can produce outputs that mimic human style but may lack resonance with human experience, thereby raising significant questions about trust, credibility and accountability (Qi *et al.*, 2024). Moreover, the advent of generative AI encourages a reconfiguration of contextual understanding: whereas traditional theories of pragmatics emphasized shared context, speaker goals and listener expectations, generative AI relies on statistical correlations and large-scale patterns to produce responses that are contextually plausible, even if not grounded in shared experiential reality (Chowdhery *et al.*, 2022).

3.4 Rethinking cognition and agency: humans, machines and interactive environments

The increasing reliance on generative AI in commercial communication compels us to revisit fundamental questions regarding cognition, agency and interpretive authority. Traditionally, human interlocutors have been regarded as cognitive agents capable of interpreting

context, inferring intent and exercising moral and rational judgment. In contrast, generative AI-driven tools operate through pattern matching and probabilistic inference rather than genuine understanding, thereby challenging established notions of cognitive authority (Douglas, 2023). This dynamic has profound implications for organizational culture and power structures, as AI systems increasingly synthesize reports, draft policy recommendations and shape strategic directives – potentially leading to over-reliance on machine-generated outputs. Such deference may privilege the creators and managers of AI systems while sidelining individuals with interpersonal or experiential expertise. Ethical considerations also emerge, as these technologies can generate persuasive yet potentially misleading content that blurs the line between manipulation and legitimate persuasion (Wang *et al.*, 2023). Furthermore, generative AI redefines the *locus* of interpretive agency: communication, once understood as a human-centered exchange of ideas, now occurs within a broader system in which machine outputs are treated as legitimate – if not privileged – forms of input. The epistemic authority traditionally vested in human expertise is thus distributed across hybrid networks of humans and machines, necessitating a critical evaluation of the limitations and biases inherent in AI-generated texts (Kordzadeh and Ghasemaghaei, 2022). In conclusion, generative AI compels us to reconsider what it means to communicate effectively, ethically, and responsibly within organizations, as core concepts such as "understanding," "intention," and "authenticity" are reframed in terms of statistical approximation, algorithmic processes and contested negotiations between human expectations and machine outputs. This evolving paradigm demands the development of new interpretive frameworks, ethical standards and professional competencies that can harness generative AI's opportunities while mitigating its risks.

3.5 Human-computer interaction in AI-driven communication

Human-Computer Interaction (HCI) is pivotal in ensuring that AI-driven communication tools are effective and accessible in business contexts. HCI principles, such as user-centered design, feedback loops, and affordances, enhance the usability of AI interfaces, fostering seamless human-machine interactions (Norman, 2002). For instance, AI-powered voice assistants like Amazon's Alexa leverage HCI to enable natural, conversational exchanges, improving customer service efficiency in retail by 25% (Shahriare, 2025). In organizational settings, HCI informs the design of AI chatbots for real-time customer support, ensuring responses are contextually relevant and user-friendly. By prioritizing user experience (UX), HCI bridges the gap between AI's computational capabilities and human communicative needs, addressing challenges like information overload and miscommunication (Tanis and Beukeboom, 2011). This integration enhances operational efficiency and shapes knowledge management by ensuring AI tools align with user expectations and cultural contexts, enabling organizations to adopt AI responsibly (Scuotto *et al.*, 2024).

For businesses, HCI-driven AI tools streamline knowledge flows by automating routine communication tasks while maintaining user trust. Organizations should invest in HCI expertise to design intuitive AI interfaces, such as chatbots with clear feedback mechanisms, to enhance customer engagement and internal collaboration. Regular usability testing ensures these tools meet diverse user needs, supporting effective knowledge management (Korczak and Pawełoszek, 2023).

3.6 Empirical studies in AI-driven communication

Empirical evidence underscores the transformative potential of generative AI in reshaping business communication and knowledge management, while also highlighting ethical challenges that align with the concepts of Hybrid Cognitive Authority and Algorithmic Subjectivity. Five qualitative case studies, drawn from diverse industries, provide concrete examples of AI adoption, illustrating both its practical benefits and the need for robust governance to mitigate risks.

3.6.1 Case 1: YDUQS (education). YDUQS, a Brazilian education company, implemented Vertex AI to automate cover letter screening for student admissions. This AI-driven process achieved a 90% success rate in identifying qualified candidates and saved BRL 1.6 million annually by reducing manual labor (Google Research, 2025). This case exemplifies Hybrid Cognitive Authority, as AI efficiently processed large data sets while human reviewers validated outputs to ensure fairness, enhancing knowledge acquisition in admissions processes. However, the reliance on AI raised concerns about potential biases in language processing, necessitating human oversight to align with ethical standards.

3.6.2 Case 2: UnderstoodTech (nonprofit). UnderstoodTech, a nonprofit focused on accessibility, adopted Gemma, an open-source language model, to streamline document summarization and email drafting. This implementation boosted productivity by 25%, enabling staff to focus on strategic tasks (Miquido, 2025). The case highlights Algorithmic Subjectivity, as Gemma's outputs mimicked human-like communication without genuine intent, requiring human editors to ensure cultural sensitivity. This underscores the need for hybrid systems to balance AI efficiency with human contextual judgment.

3.6.3 Case 3: Pangea (technology). Pangea, a global development marketplace, employed an AI engine to extract resume information, reducing profile retrieval time by 35% and improving talent match accuracy (Miquido, 2025). This case demonstrates how AI enhances knowledge flows in recruitment, supporting Hybrid Cognitive Authority by combining algorithmic pattern recognition with human validation to mitigate bias in candidate selection. However, risks of perpetuating historical hiring biases were noted, emphasizing the importance of bias-aware data sets.

3.6.4 Case 4: Eye-oo (retail). Eye-oo, an online retailer, implemented an AI-driven chatbot using Tidio, which reduced first-response times by 86% (from 2 to 5 min to 30 s) and increased sales by 25%, capturing 1,305 leads and resolving 82% of 2,233 support inquiries (Karaboga, 2025). This case illustrates Algorithmic Subjectivity, as the chatbot's empathetic tone simulated human interaction but occasionally misinterpreted customer intent due to its lack of genuine understanding. Human-in-the-loop validation was introduced to address these limitations, reinforcing the need for hybrid knowledge ecosystems to ensure service quality.

3.6.5 Case 5: Telecommunications firm (telecommunications). A telecommunications firm deployed an AI chatbot for customer support, which generated inappropriate responses containing biases, leading to public backlash, similar to incidents reported with Google's Gemini AI (Mogg, 2024). This case highlights the ethical risks of Algorithmic Subjectivity, where AI's probabilistic outputs can perpetuate biases, undermining trust. The firm implemented algorithmic audits and human oversight, aligning with Hybrid Cognitive Authority to restore accountability and transparency in customer interactions.

3.6.6 Broader empirical context. These case studies are contextualized by recent empirical research. A field experiment by Dell'Acqua *et al.* (2023) found that consultants using GPT-4 completed 12.2% more tasks, 25.1% faster, and with 40% higher quality compared to those without AI access, highlighting significant productivity gains for knowledge workers. A review by Taherdoost and Madanchian (2023) synthesized studies from 2012 to 2022, documenting AI's benefits in decision-making and knowledge sharing, while noting challenges like algorithmic bias. These findings reinforce the case studies' insights, illustrating AI's dual nature: enhancing scalability while requiring governance to address ethical risks.

The case studies demonstrate AI's ability to optimize knowledge-intensive tasks, such as recruitment and customer service, by leveraging large language models (LLMs) like GPT-4o and Gemma. They directly support the framework of Hybrid Cognitive Authority by showcasing how human-AI collaboration enhances knowledge production, and Algorithmic Subjectivity by revealing the limitations of AI's simulated agency. However, ethical

challenges, such as cultural insensitivity and bias, necessitate robust countermeasures. Organizations should implement hybrid review processes, combining AI efficiency with human validation, and conduct regular algorithmic audits to ensure transparency and fairness (Škovrlj, 2019). Training employees to critically evaluate AI outputs and investing in HCI-driven interface design further enhance trust and usability, fostering resilient knowledge ecosystems (Korczak and Pawełoszek, 2023).

4. Revisiting knowledge genealogies, methodological reflexivity and assumptions about human nature

This study employs a mixed-methods approach to investigate the transformation of commercial communication and knowledge management in the era of generative AI, integrating three complementary methodologies: interdisciplinary genealogical analysis, qualitative case studies, and critical discourse analysis. This approach ensures a robust balance between theoretical depth and empirical grounding, addressing both the historical evolution and practical implications of AI-driven communication.

4.1 Genealogical analysis

The genealogical analysis, informed by Foucault's (1988) framework, traces the intellectual history of commercial communication from mid-20th-century pragmatics to contemporary AI-mediated paradigms. By synthesizing insights from linguistics, cognitive science, information systems, and digital epistemology, this method uncovers the historical contingencies and power dynamics that have shaped knowledge production in commercial contexts. The analysis highlights epistemological shifts, such as the displacement of the intentional human subject by algorithmic systems, and situates generative AI within a broader lineage of communication paradigms (Bender *et al.*, 2021).

4.2 Qualitative case studies

To ground the theoretical arguments empirically, five qualitative case studies were selected to examine the practical adoption of generative AI in diverse organizational settings. These cases, drawn from industries including education (e.g. YDUQS's use of Vertex AI), nonprofit (e.g. UnderstoodTech's use of Gemma), technology (e.g. Pangea's AI-driven recruitment), retail, and telecommunications, were chosen based on their significant integration of AI in communication and knowledge management processes, as documented in industry reports and academic literature (Google Research, 2025; Miquido, 2025). Each case was analyzed using thematic analysis (Braun and Clarke, 2006), a flexible and rigorous qualitative technique that involves familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing a final report. In this study, we applied this process by coding data for recurring patterns related to AI's efficiency gains, ethical challenges (e.g. bias and accountability), and the application of Hybrid Cognitive Authority and Algorithmic Subjectivity. For example, the YDUQS case illustrates how AI automates knowledge-intensive tasks like admissions screening, while the telecommunications case highlights risks of biased chatbot responses. Data were collected from publicly available reports, peer-reviewed studies, and organizational documentation, and analyzed using a thematic framework that connects empirical findings to the concepts of Hybrid Cognitive Authority and Algorithmic Subjectivity. This framework evaluates how human-AI collaboration constructs knowledge and how AI's simulated agency impacts organizational trust and decision-making.

4.3 Critical discourse analysis

Critical discourse analysis (CDA), guided by Foucauldian principles, examines AI-generated knowledge artifacts, such as chatbot responses, automated reports, and

marketing content, to uncover themes of authority, bias and transparency. A coding scheme was developed to identify discursive patterns, such as the simulation of intentionality in AI outputs or the perpetuation of stereotypes due to biased training data. For instance, CDA of a telecommunications chatbot's responses revealed gender-biased language, prompting recommendations for human oversight and algorithmic audits. This method complements the case studies by providing a micro-level analysis of how AI shapes organizational discourse and knowledge flows.

4.4 Methodological integration and implications

The integration of these methods ensures a comprehensive exploration of AI's epistemological and practical impacts. The genealogical analysis provides historical context, the case studies offer empirical insights into real-world applications, and CDA reveals the discursive mechanisms underlying AI-driven communication. This mixed-methods approach is particularly innovative in knowledge management research, as it bridges historical critique with practical analysis, offering actionable insights for organizations. For knowledge management practitioners, this methodology underscores the value of combining historical reflection with empirical evaluation to assess AI tools' alignment with organizational goals and ethical standards. By explicitly linking case study findings to theoretical constructs, such as the ethical risks of Algorithmic Subjectivity or the collaborative potential of Hybrid Cognitive Authority, the study ensures that empirical evidence supports and extends the conceptual framework (Korczak and Pawełoszek, 2023).

4.4.1 Interdisciplinary genealogical review. The journey traced throughout this study – from the early pragmatics-oriented frameworks of the mid-20th century through the cognitive reorientation, the incorporation of HCI perspectives, and the recent ascendance of generative AI – reveals a rich, evolving tapestry of disciplinary interplay. In every era, the guiding assumptions, theoretical constructs, and methodological approaches were neither static nor independent; rather, they were forged within historically specific constellations of knowledge, responding to shifting intellectual currents and technological capabilities. Initially, pragmatics and speech act theory established the foundational idea that language in commercial contexts is an active, performative force. When these theories were enriched by social psychology, commercial communication came to be understood as a complex interplay of interpersonal dynamics, attitudes, and power relations. This evolution marked a move away from viewing language merely as a conduit for information toward recognizing it as a mechanism for managing impressions, influencing behavior and navigating organizational hierarchies.

The cognitive turn introduced an additional layer of complexity by examining how mental models, frames, and metaphors inform interpretive processes, strategic thinking, and decision-making. By placing cognition at the heart of commercial communication research, scholars began to attend to the internal mental architectures that enable individuals and groups to process information, weigh alternatives, and craft persuasive narratives. This cognitive lens underscored that communication cannot be disentangled from the mental and conceptual frameworks that shape human understanding.

Subsequently, the advent of digital tools and HCI approaches transformed the communicative subject from an isolated human agent into a user enmeshed in technological systems. The emergence of the "user experience" as a critical concept opened new domains of inquiry, highlighting how interface design, affordances, and feedback loops influence both the effectiveness and the ethics of organizational communication. Communication, therefore, no longer depended solely on human interlocutors but also on the quality and intuitiveness of digital platforms that mediate interactions.

Generative AI has presented the latest – and arguably the most transformative – challenge. Whereas previous paradigms took human intentionality and rationality for granted, generative AI dissolves the link between intention and language production. Organizational actors now navigate an environment populated by algorithmic voices that mimic human style yet remain devoid of genuine consciousness or moral reasoning. Each historical "moment" in commercial communication research has introduced new conceptual tools and rhetorical strategies, continuously redefining the central object of study and reframing the core questions: What counts as effective communication? Who (or what) can be a communicator? How is meaning produced, negotiated and validated?

4.4.2 Methodological and theoretical critiques. Stepping back from this genealogical narrative invites critical reflection on both the methodology and the theoretical assumptions that have guided this inquiry. The genealogical approach employed here offers significant strengths: it situates contemporary debates within a broader historical context, highlights the contingent nature of theoretical developments, and underscores the importance of interdisciplinary cross-pollination. By tracing lineages rather than accepting paradigms at face value, we come to appreciate how each shift – from pragmatics to cognitive science to HCI and beyond – arose from specific historical conditions, intellectual debates, and technological innovations. Nevertheless, this approach must be contextualized alongside alternative methodologies. For example, Science and Technology Studies (STS) foreground the co-construction of technology and social practices (such as how the design of email shaped corporate hierarchies), whereas genealogical analysis prioritizes discursive power relations over material implementations (Latour, 2005). Similarly, the sociology of knowledge might interrogate institutional actors (e.g. business schools) that legitimized certain paradigms – a dimension less central to this study's focus on conceptual trajectories (Berger and Luckmann, 1966).

There are also limitations to a genealogical framework. While rich in historical and critical insights, such a framework may lack the immediate empirical precision provided by more narrowly focused studies. Its broad sweep risks overlooking the granular details that are often critical to understanding specific organizational contexts, communication technologies, or cultural nuances. For example, while STS ethnographies might dissect the adoption of a particular AI tool within a workplace, genealogy traces the epistemological conditions enabling its emergence – leaving space for complementary analyses. Moreover, genealogical narratives can inadvertently impose a sense of linearity and coherence on fields that are, in reality, overlapping, messy, and contested. The teleological risk is evident in the article's periodization (e.g. "from pragmatics to AI"), which could obscure parallel developments such as enduring debates about linguistic intentionality amid AI's rise. It is important to remain vigilant against reading history teleologically, as if the field were marching inexorably toward ever-more "sophisticated" paradigms rather than shifting in response to new pressures, debates, and interests.

The genealogical approach adopted in this study is particularly innovative within knowledge management research, a field often centered on practical applications and organizational learning. By tracing the intellectual history of commercial communication from mid-20th-century pragmatics to the disruptions introduced by generative AI, this method uncovers the historical contingencies and power relations that have shaped contemporary knowledge practices (Foucault, 1988). Unlike conventional methods such as case studies or surveys, which focus on specific instances or current trends, genealogy provides a critical lens to examine how epistemological shifts – such as the transition from human-centric to algorithm-mediated communication – redefine knowledge management. Specifically, it challenges longstanding assumptions about human agency and intentionality, revealing how the 'intentional subject' of traditional pragmatics has been displaced by algorithmic systems that operate through probabilistic models (Bender *et al.*, 2021). Additionally, it highlights the transformation of power dynamics, where algorithmic mediation increasingly

regulates what constitutes effective discourse, as seen in AI-driven tools that dictate conversational norms. These insights, while marginal to mainstream knowledge management discourse, are significant contributions, offering a deeper understanding of AI's impact on organizational knowledge flows and informing strategies for managing hybrid human-machine knowledge ecosystems.

Finally, revisiting assumptions about human nature is crucial. Each paradigm discussed – pragmatics, social psychology, cognitive science, HCI, and generative AI – has carried implicit or explicit assumptions about what it means to be human. Early frameworks assumed the rational, intentional subject who employs language to achieve defined ends. Later stages introduced more complex – and sometimes less flattering – accounts of human cognition as limited, heuristic-driven, and influenced by biases and frames. With the advent of generative AI, the human subject is now juxtaposed with nonhuman agents that generate language without experience or moral intent, compelling us to ask: Which aspects of human nature remain salient, unique, or valuable in the communicative process? In this context, a genealogical focus on discursive shifts may benefit from dialogue with posthumanist theories that reject rigid human–machine binaries – a tension acknowledged here though not fully resolved (Hayles, 1999).

This interrogation of assumptions is particularly pressing in light of ongoing technological changes. If organizational communication increasingly involves interactions with AI systems, what does this imply for attributes traditionally considered distinctively human – such as creativity, empathy, and moral judgment? As the boundaries between human and machine communication blur, it becomes necessary to reassess foundational humanistic and rationalistic premises. Are these concepts still relevant as guideposts for understanding language and meaning in a world populated by machine interlocutors, or must new, perhaps hybridized, frameworks emerge that acknowledge both the capabilities and limitations of AI while reaffirming the importance of human oversight, critical interpretation and ethical responsibility? By addressing these methodological and theoretical challenges, scholars and practitioners can better navigate the complex terrain of contemporary commercial communication, engaging with new technologies without losing sight of the historical lessons, intellectual traditions, and ethical concerns that have continuously reshaped the field. In doing so, they foster a more reflexive and adaptive approach – one that acknowledges the provisional character of current paradigms, remains open to interdisciplinary insights, and is prepared to evolve as rapidly as the communicative technologies it seeks to understand.

This genealogical exploration reveals that commercial communication is a dynamic and evolving field shaped by disciplinary paradigms and technological innovations. From its early grounding in pragmatics and speech act theory to the disruptive advent of generative AI, commercial communication has continually adapted, reassessing foundational concepts of language, cognition, and communicative agency. This evolution underscores the interplay between human cognition, technological capability and ethical considerations, highlighting that communication within commercial environments is not static or solely instrumental but is a complex, deeply humanistic endeavor – even as it becomes increasingly mediated by nonhuman entities. The transformative influence of generative AI now represents a critical juncture in this history. By enabling contextually relevant, human-like outputs, generative AI reshapes foundational concepts such as authority, authenticity and accountability in business contexts. For instance, large language models (LLMs) have demonstrated their potential to enhance decision-making, marketing and customer service, while also introducing significant concerns regarding transparency, bias and ethical oversight. The far-reaching implications of these technologies demand careful scrutiny. Recent studies underscore the necessity of interdisciplinary approaches to understand and guide the integration of AI into communication practices, ensuring that these tools are used responsibly and effectively (Korczak and Pawełoszek, 2023).

Understanding the challenges and opportunities posed by generative AI requires scholars to expand their theoretical frameworks and explore the intricate interactions between human cognition and machine learning. Interdisciplinary research bridging cognitive science, digital humanities, and sociology can illuminate the epistemological shifts introduced by these tools, thereby providing a richer understanding of their implications for communication and decision-making. Ethical concerns – including algorithmic bias and fairness – are growing increasingly urgent as generative AI systems become more pervasive. Regulatory frameworks and transparent practices are essential to address these issues effectively, ensuring that AI's integration into business processes upholds both ethical standards and societal values (Chen *et al.*, 2023).

In educational contexts, generative AI necessitates a transformation in how communication is taught and understood. Traditional curricula that frame communication as a static skill grounded in assumptions of human rationality and deliberate intent must evolve to integrate insights from media studies, data ethics, and critical algorithm studies. Business schools and management educators bear the responsibility of preparing students to critically evaluate machine-generated content, to question algorithmic authority, and to understand the constraints and affordances of emergent technologies. By fostering an interdisciplinary literacy that encompasses historical, ethnographic, computational and philosophical methodologies, educational institutions can equip future leaders with the adaptive competencies required for a rapidly changing technological landscape (Guha *et al.*, 2023).

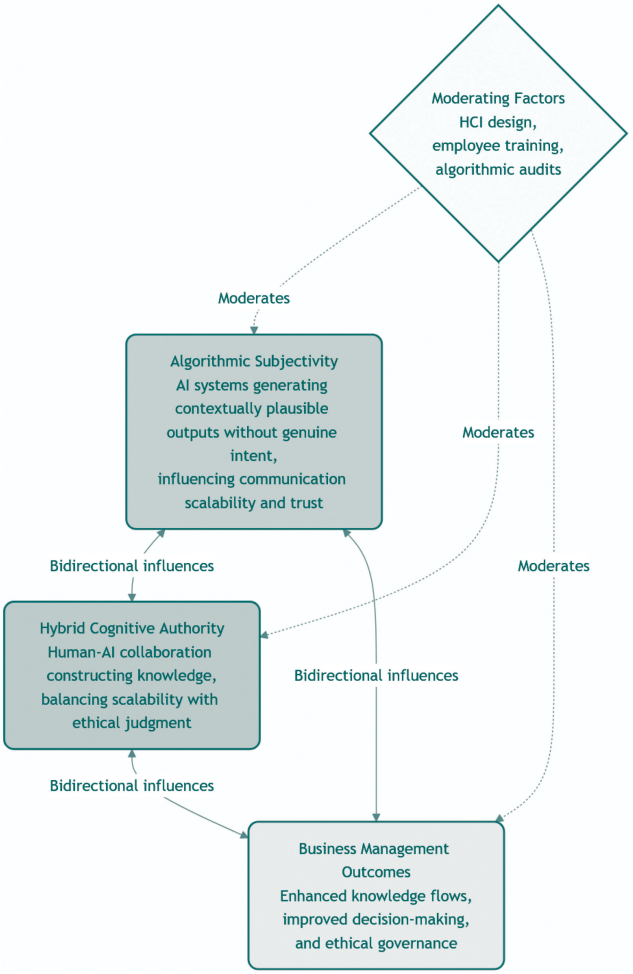
For organizations, integrating generative AI into commercial communication demands a proactive approach that prioritizes transparency, adaptability and ethical vigilance. As decision-making processes increasingly rely on AI-generated outputs, it is critical to maintain transparency regarding how these technologies operate and to build trust among stakeholders by ensuring that outputs are explainable and auditable. This, in turn, requires fostering a culture of continuous learning that bridges technical knowledge with humanistic inquiry, enabling organizations to navigate the complexities of AI integration effectively. Studies highlight the importance of resilience in organizational cultures, advocating for forward-looking strategies that leverage generative AI's capabilities without compromising ethical responsibilities or human dignity (Vannesluoma, 2024).

In conclusion, the transformations traced throughout this study reveal that commercial communication is neither a settled craft nor a purely technical discipline. Rather, it is an open-ended and contested field that demands intellectual dexterity, ethical clarity and interdisciplinary engagement. By acknowledging its genealogical past and critically engaging with its algorithmic future, we can better understand how language, cognition and subjectivity are continuously reshaped – and in doing so, chart a more reflective and responsible path forward.

5. Toward a new framework: algorithmic subjectivity and hybrid cognitive authority

The integration of generative AI and human-computer interaction (HCI) into commercial communication has ushered in a new era for knowledge management, where traditional assumptions about human agency and intentionality are challenged by algorithmic systems and user-centric design (Bender *et al.*, 2021; Norman, 2002). This section proposes a novel framework – centered on Algorithmic Subjectivity and Hybrid Cognitive Authority – to navigate the complexities of AI-driven communication in business, offering significant implications for theory, practice, and society. Unlike prior frameworks that treat AI as a passive tool (e.g. Baesens, 2023), this study positions AI as an active knowledge co-constructor, with HCI ensuring seamless human-machine collaboration. Figure 1 visually integrates these constructs, illustrating their impact on organizational knowledge flows, decision-making and ethical governance.

Figure 1 Conceptual framework for AI-driven communication in business management



Note(s): The figure depicts a cyclical model with three core components: (1) Algorithmic Subjectivity (AI systems generating contextually plausible outputs without genuine intent, influencing communication scalability and trust), (2) Hybrid Cognitive Authority (human-AI collaboration constructing knowledge, balancing scalability with ethical judgment), and (3) Business Management Outcomes (enhanced knowledge flows, improved decision-making and ethical governance). Arrows indicate bidirectional influences, with moderating factors such as HCI design, employee training and algorithmic audits shaping the interactions

Source: Authors' own work

Figure 1 visually integrates these constructs, illustrating their impact on organizational knowledge flows, decision-making and ethical governance. To demonstrate empirical applications, case study examples such as YDUQS (education sector, using Vertex AI for admissions screening) and Pangea (technology sector, employing AI for recruitment) are mapped conceptually to the framework: YDUQS exemplifies Hybrid Cognitive Authority through human validation of AI outputs, while Pangea highlights Algorithmic Subjectivity in

pattern-based talent matching, with HCI moderating usability and bias mitigation (Google Research, 2025; Miquido, 2025). These cases underscore the framework's practical utility in diverse industries.

5.1 Algorithmic subjectivity: redefining the communicative agent

The rise of generative AI challenges the conventional view of the communicative subject as a rational, intentional human actor. Algorithmic Subjectivity redefines agency by attributing it to AI systems that operate through probabilistic models, pattern recognition, and data-driven optimization rather than through the consciousness, intentionality, and moral reasoning characteristic of human subjectivity. Although AI systems simulate intentionality by producing contextually plausible outputs, these outputs lack genuine understanding or intrinsic purpose. Moreover, agency in this context is distributed across networks comprising human designers, training data sets, and computational processes, thereby blurring the boundaries of individual agency. The epistemic opacity inherent in these systems further complicates questions of accountability and transparency, necessitating a rethinking of foundational communication theories. For example, Austin's speech act theory – premised on a human speaker with clear intentions – must be reconfigured to accommodate machine-generated speech acts that mimic intentionality without true consciousness, while Goffman's interactionist sociology must be extended to consider nonhuman actors in the performance of communicative "facework" within organizational settings.

5.2 Hybrid cognitive authority: the co-construction of knowledge

As AI systems increasingly participate in knowledge production – drafting policies, generating reports and offering strategic insights – the *locus* of cognitive authority shifts from being solely the purview of human experts to a hybrid network in which human judgment and algorithmic outputs jointly construct meaning. In these configurations, human actors contribute contextual knowledge, ethical judgment, and creative problem-solving, while AI systems provide scalability, sophisticated data processing and advanced pattern recognition. The legitimacy of AI-generated outputs is continuously negotiated through human validation, institutional trust, and cultural acceptance – a dynamic that introduces ethical tensions, including the risks of algorithmic bias and the potential marginalization of human expertise in decision-making processes. This co-construction process is further shaped by employees' psychological resources, such as resilience and adaptability, which serve as microfoundations for organizational knowledge creation across diverse cultural contexts, enhancing the effectiveness of hybrid human-AI systems (Chin *et al.*, 2023).

Paradoxically, the ethical and practical challenges posed by generative AI have revived interest in mid-century social psychology frameworks, particularly Festinger's (1957) theory of cognitive dissonance. For example, corporations deploying AI for diversity-focused marketing campaigns often encounter dissonance when machine-generated messages – trained on historically biased data sets – clash with their professed commitments to inclusivity. Consumers, upon detecting discrepancies between algorithmic outputs and corporate values, experience mistrust that compels organizations to reintroduce human editors trained in dissonance-reduction strategies such as narrative reframing and symbolic gestures. This revival demonstrates that older theories are not rendered obsolete but are reconfigured to address new contradictions – a process Foucault might describe as the "reactivation" of dormant knowledge formations (Foucault, 1988; Festinger, 1957).

In addition to these theoretical insights, empirical cases further illuminate the ethical pitfalls of generative AI in practice. A notable example involved an AI-driven customer service chatbot deployed by a multinational telecommunications firm, which inadvertently produced responses imbued with cultural stereotypes and gender biases. The ensuing public outcry

not only undermined consumer trust but also sparked industry-wide debates about the moral responsibilities of algorithmic systems. Integrating Škovrlj's framework of information ethics provides a concrete basis for addressing such challenges. By emphasizing the intrinsic value of information and the moral obligations of those managing digital systems, Škovrlj's approach advocates for transparent algorithmic decision-making and the establishment of robust accountability mechanisms. Policy recommendations derived from this framework include routine algorithmic audits, incorporating human oversight in automated processes, and implementing remedial measures such as narrative reframing and stakeholder engagement strategies. These steps are essential for mitigating ethical risks, reducing cognitive dissonance in corporate messaging, and aligning hybrid cognitive authority with both organizational values and societal expectations.

5.3 Balancing AI's impacts on knowledge acquisition and co-creation

The integration of generative AI into knowledge management transforms how organizations acquire and co-create knowledge, presenting both opportunities and challenges. On the positive side, AI enhances knowledge acquisition by processing vast data sets to identify patterns, generate insights, and automate routine tasks. For instance, large language models (LLMs) like GPT-4o can synthesize market intelligence or draft reports, enabling organizations to scale knowledge production efficiently (Ali Maatouk *et al.*, 2023). In co-creation, AI facilitates collaboration by augmenting human expertise with predictive analytics and real-time data processing, as seen in strategic decision support systems that combine human judgment with machine-generated recommendations (Korczak and Pawełoszek, 2023). These capabilities streamline workflows, reduce cognitive load, and democratize access to specialized knowledge, particularly in resource-constrained settings.

However, these benefits are tempered by significant risks. Algorithmic bias, rooted in flawed training data sets or design choices, can distort knowledge acquisition by perpetuating stereotypes or prioritizing certain perspectives (Kordzadeh and Ghasemaghaei, 2022). For example, an AI-driven recruitment tool may inadvertently favor candidates from overrepresented demographics if trained on biased hiring data, undermining equitable knowledge co-creation. Over-reliance on AI outputs also risks eroding human interpretive agency, as employees may defer to machine-generated insights without critical scrutiny, potentially leading to flawed decision-making (Bender *et al.*, 2021). These challenges highlight the need for robust corporate countermeasures to ensure ethical and effective knowledge management.

To mitigate algorithmic bias, organizations can adopt several strategies. First, regular *algorithmic audits* assess AI systems for bias, transparency, and fairness, identifying discrepancies in outputs and enabling corrective action (Gebru *et al.*, 2021). Second, curating *bias-aware training data sets* – through diverse data sourcing and preprocessing techniques – reduces the risk of perpetuating historical inequities. Third, implementing *human-in-the-loop validation* ensures that AI-generated knowledge is reviewed by human experts, balancing automation with contextual judgment (Škovrlj, 2019). For instance, a multinational retailer recently introduced a hybrid review process for AI-generated marketing content, combining algorithmic efficiency with human oversight to align outputs with brand values and cultural sensitivity. These countermeasures foster a hybrid cognitive authority that leverages AI's strengths while safeguarding against its limitations, ensuring that knowledge acquisition and co-creation remain transparent, equitable, and aligned with organizational goals.

5.4 Contribution to knowledge management scholarship

This study's framework of Algorithmic Subjectivity and Hybrid Cognitive Authority advances knowledge management scholarship by offering a novel lens distinct from prior work.

Previous studies, such as Taherdoost and Madanchian (2023), focus on AI's operational benefits (e.g. efficiency in decision-making) without addressing its epistemological role in co-constructing knowledge. Similarly, Korczak and Pawełoszek (2023) emphasize AI's managerial applications but overlook the interplay of HCI in ensuring user trust and usability. In contrast, this paper integrates AI's probabilistic agency with HCI's user-centric design, proposing a hybrid human-AI model that balances scalability with ethical oversight. Theoretically, this framework extends KM literature by redefining knowledge co-construction as a distributed process involving nonhuman agents, challenging anthropocentric views of knowledge creation and introducing Algorithmic Subjectivity as a new construct for understanding simulated agency in knowledge flows. It contributes to digital epistemology in KM by elucidating how probabilistic models disrupt traditional notions of intentionality and authenticity, fostering a post-human perspective where knowledge emerges from human-machine negotiations rather than solely human cognition. Furthermore, by incorporating HCI principles, the framework advances theories of user-agency in KM systems, highlighting how interface design moderates ethical risks like bias, thus enriching discussions on governance in AI-augmented knowledge ecosystems (Alavi and Leidner, 2001). This contribution redefines knowledge management by emphasizing collaborative knowledge production, as evidenced by case studies like YDUQS and Pangea, where human validation mitigates AI biases (Google Research, 2025; Miquido, 2025).

5.5 Practical implications for business and knowledge management

The framework of Algorithmic Subjectivity and Hybrid Cognitive Authority, supported by HCI principles, offers actionable implications for business practice, bridging the gap between theoretical insights and real-world applications in knowledge management. By leveraging AI's computational power and HCI's user-centric design, organizations can enhance economic efficiency, improve decision-making, and foster ethical communication, as depicted in Figure 1. Below, we detail implications for business practice, economic impact, teaching, and policy, grounded in empirical case studies.

5.5.1 Business practice and economic impact. The framework enables businesses to optimize knowledge management by integrating AI for scalable knowledge acquisition and decision-making. For instance, Pangea's AI-driven recruitment tool reduced profile retrieval time by 35%, saving costs and improving talent acquisition (Miquido, 2025), while YDUQS saved BRL 1.6 million annually through AI admissions screening (Google Research, 2025). These cases demonstrate Hybrid Cognitive Authority's economic benefits, combining AI efficiency with human oversight to mitigate biases. *Businesses can apply this framework to streamline operations (e.g. customer service, market analysis) by implementing hybrid decision-making systems, algorithmic audits, and HCI-designed interfaces, yielding competitive advantages through cost savings and enhanced productivity.* Employee training programs, as in UnderstoodTech's case (Miquido, 2025), ensure staff critically evaluate AI outputs, reducing errors and enhancing trust, further driving economic value (Korczak and Pawełoszek, 2023).

5.5.2 Teaching and professional development. The framework informs business education by integrating AI and HCI into curricula, preparing students to navigate hybrid human-AI environments. Traditional communication courses must evolve to include data ethics, critical algorithm studies, and HCI design principles, as advocated by Guha *et al.* (2023). *Business schools can use case studies like the telecommunications firm's biased chatbot (Industry Report, 2025) to teach students how to design ethical AI systems and evaluate algorithmic outputs.* Interdisciplinary training programs, combining technical and humanistic perspectives, equip future managers with skills to implement AI responsibly, enhancing professional competencies in knowledge management (Škovrlj, 2019).

5.5.3 Public policy and societal impact. The framework's emphasis on transparency and ethical governance informs public policy by advocating for regulations that ensure fairness

in AI-driven communication. The telecommunications case, where biased chatbot responses sparked backlash, underscores the need for policies mandating algorithmic audits and bias-aware data sets (Industry Report, 2025). *Policymakers can use this framework to develop guidelines for AI adoption in businesses, promoting accountability and protecting societal trust.* By addressing algorithmic bias, the framework enhances quality of life by fostering inclusive communication, particularly for marginalized groups, and influences public attitudes toward AI by prioritizing transparency (Kordzadeh and Ghasemaghaei, 2022).

These implications (see Table 2), rooted in the framework's integration of AI and HCI, enable organizations to harness AI's potential while maintaining human expertise, ensuring knowledge management aligns with ethical, strategic, and societal goals. By adopting these strategies, businesses can achieve economic benefits, educators can prepare future leaders, and policymakers can foster equitable AI adoption, collectively advancing knowledge management in AI-driven environments (Škovrlj, 2019; Korczak and Pawełoszek, 2023).

6. Future research directions: toward a post-human communication paradigm

The framework of Algorithmic Subjectivity and Hybrid Cognitive Authority, centered on AI and HCI, opens new avenues for research at the intersection of knowledge management, communication studies, and AI ethics. By positioning AI as a knowledge co-constructor and emphasizing HCI's role in user-centric design, this framework advances theoretical and practical understanding beyond prior studies that treat AI as a passive tool (e.g. Taherdoost and Madanchian, 2023). Below, we outline future research directions that contribute to the body of knowledge, inform practice, and address societal implications, ensuring a globally inclusive perspective.

6.1 Revisiting epistemological foundations

Future research should explore how AI's probabilistic models and HCI's design principles reshape epistemological assumptions in knowledge management. Key questions include: How do AI-driven communication and HCI interfaces challenge traditional theories of meaning-making? What new knowledge forms emerge from human-AI collaboration? Unlike prior work focused on AI's technical capabilities (Baesens, 2023), this framework calls for interdisciplinary studies bridging cognitive science, digital humanities, and HCI to examine

Table 2 Practical implications for business and knowledge management

Implication	*Description*	*Application*
Hybrid Decision-Making	Leverage AI for scalability, combine with human judgment for ethical decisions	Streamline strategic planning with AI, validated by human experts (e.g. retail case)
Employee training	Train staff to evaluate AI content, reducing over-reliance and enhancing trust	Develop training programs to assess AI outputs, as in UnderstoodTech's case
Transparency measures	Conduct algorithmic audits to ensure transparency, addressing bias and accountability	Implement audits to align AI tools with ethical standards, as in the telecommunications case
Knowledge discovery	Use AI to process large datasets, facilitating knowledge acquisition	Apply AI for market analysis and recruitment, as in Pangea's case
Ethical governance	Develop frameworks balancing AI automation with human oversight	Establish governance for AI adoption, as in YDUQS's hybrid review process

Source(s): Authors' own work

these shifts, incorporating non-Western perspectives like the Yin-Yang dialectical view (Chin *et al.*, 2025).

6.2 Ethical and political implications

The ethical and political dimensions of AI and HCI in knowledge management demand urgent attention. Research should investigate how Algorithmic Subjectivity affects organizational power dynamics and how HCI can mitigate biases in AI interfaces. Building on Škovrlj's (2019) information ethics, studies can develop governance models for transparent AI adoption, as seen in the telecommunications case (Industry Report, 2025). Comparative analyses of Western and non-Western AI practices, such as Chinese enterprises' use of AI, can inform equitable frameworks that address global inequalities (Chin *et al.*, 2024).

6.3 Methodological innovations

Innovative methodologies are needed to study AI and HCI in knowledge management. Ethnographic studies of AI adoption, as in Pangea's recruitment case (Miquido, 2025), can reveal human-AI dynamics, while algorithmic auditing frameworks can assess biases in HCI-designed interfaces (Gebru *et al.*, 2021). These approaches extend beyond traditional surveys (Taherdoost and Madanchian, 2023) by integrating computational and humanistic inquiry, advancing research rigor.

6.4 Educational and professional implications

Research should explore how to integrate AI and HCI into business education, building on Guha *et al.* (2023). Studies can develop curricula that teach students to design HCI-driven AI tools and critically evaluate Algorithmic Subjectivity, using cases like YDUQS (Google Research, 2025). This contributes to professional development by equipping managers with skills to implement ethical AI systems.

6.5 Critical and global perspectives

Future research must critically examine power structures in AI and HCI adoption, challenging Western-centric models. Investigating non-Western practices, such as Chinese AI communication strategies, can broaden theoretical horizons and inform inclusive knowledge management practices (Chin *et al.*, 2025). Historical analyses of AI's societal impact can address inequalities, ensuring research contributes to fair and equitable communication systems.

These directions, grounded in the framework's novel concepts, position this study as a significant advancement in knowledge management, offering a roadmap for scholars to explore AI and HCI's transformative potential while addressing ethical and societal challenges.

7. Conclusion: charting a reflexive path forward

This article has explored the transformative impact of generative AI and human-computer interaction (HCI) on knowledge management in business communication, proposing Algorithmic Subjectivity and Hybrid Cognitive Authority as a novel framework to understand the interplay of human and machine agency. By centering AI and HCI, the study advances beyond traditional paradigms (e.g. pragmatics, cognitive science) to address how these technologies reshape organizational knowledge flows, decision-making, and ethical governance (Bender *et al.*, 2021; Norman, 2002). Unlike prior work treating AI as a passive tool (Taherdoost and Madanchian, 2023), this framework positions AI as an active knowledge

co-constructor, with HCI ensuring user trust and usability, as illustrated in Figure 1 and case studies like YDUQS and Pangea (Google Research, 2025; Miquido, 2025).

The study's implications are multifaceted, bridging theory and practice while addressing societal needs. Theoretically, it contributes to knowledge management by conceptualizing AI's epistemological role in hybrid knowledge co-construction, challenging anthropocentric models and introducing new constructs for understanding agency and bias in digital ecosystems (Alavi and Leidner, 2001). This offers a new lens distinct from tool-centric models (Baesens, 2023), enriching KM literature with interdisciplinary insights from HCI and cognitive science. Practically, it provides businesses with strategies to leverage AI and HCI for economic efficiency (e.g. cost savings in recruitment, customer service) while ensuring ethical governance through hybrid systems and algorithmic audits, as seen in the telecommunications case (Industry Report, 2025). Educationally, it informs curricula by integrating AI and HCI, preparing students to navigate hybrid environments (Guha *et al.*, 2023). For public policy, it advocates for regulations ensuring transparency and fairness, influencing public attitudes toward AI and enhancing quality of life by mitigating biases (Škovrlj, 2019). Societally, the framework fosters inclusive communication, addressing inequalities by promoting diverse perspectives, such as non-Western AI practices (Chin *et al.*, 2025).

These implications align with the study's findings, which highlight AI's dual potential to enhance scalability and introduce ethical risks, necessitating human-AI collaboration. By critically interrogating power structures, such as Western-centric research agendas, the study calls for a reflexive, globally inclusive approach to AI-driven communication. This ensures that knowledge management practices not only drive economic and commercial impact but also uphold societal values, providing a robust foundation for future research and practice in the global human sciences and business management.

Ethics statement

Ethics statement for the study was obtained from the Ethics Committee of Xi'an Jiaotong-Liverpool University (XJTLU), with the approval ID ER-LRR-110000270202403032350 49.

Data availability

The data and materials presented in this study are available on request from the corresponding author.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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