



Welcome, new brand colleague! A conceptual framework for efficient and effective human–AI co-creation for creative brand voice

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Revised: 3 March 2025 / Accepted: 20 March 2025
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Abstract

The rapid advancement of artificial intelligence (AI) capabilities has extended into creative realms, presenting opportunities for creative collaboration between human brand professionals and AI in support of brand voice efforts. However, there remains little clarity regarding the implementation of this creative interaction. With a conceptual approach, the current research proposes a three-level framework of human–AI co-creation for creative brand voice that highlights key factors that can facilitate brand efficiency and effectiveness at the individual (AI task roles, co-creation teaming, knowledge and skills), organisational (infrastructure and brand voice database, socialisation), and societal (responsibility and accountability, AI transparency, brand voice copyright) levels. Each level presents different challenges and insights. At the individual level, it is critical to consider operational processes; at the organisational level, managing the interactions is key; and at the societal level, external influences must be accounted for, to manage the brand. This research contribution in turn offers theoretical guidance, aligned with a high-level brand management perspective, on how to pursue efficiency and effectiveness at three defined levels, as well as relevant avenues for further research.

Keywords Brand management · Artificial intelligence · Brand voice · Co-creation · Creativity

Introduction

Artificial intelligence (AI) capabilities have evolved enough to support creative, collaborative efforts with human creative agents (Rezwana and Maher 2023; Veale and Pérez 2020). This human–AI co-creation (HAICC) represents the effort of both entities towards a common goal, such that the generated outcomes cannot be attributed solely to the human or the algorithm and instead exceed the capabilities of either partner (Jarrahi 2018; Liapis et al. 2016). Considering how extensively AI-based text systems have increased in popularity—ChatGPT-3 set a record for the quickest growing consumer application ever, recording 100 million monthly active users within just three months of its release

(Hu 2023)—suggesting expanded opportunities for brands to work creatively with AI to develop unique content and brand voice (Dwivedi et al. 2023). Brand voice, as perceived by intended recipients according to its tonality, attitude, choice of language, typography, and content (Kohli and Yen 2020), can represent a brand’s spoken identity and personality (Vernuccio et al. 2023), as well as embody the brand in written formats, images, sound, and video (Kirkby et al. 2022).

Initial studies show that co-creation with AI can improve human performance, produce better brand outputs, and assist in achieving efficiency and effectiveness goals (Chaisatitkul et al. 2024; Dell’Acqua et al. 2023; Hartmann et al. 2024). Such promise suggests the need to understand and specify the requirements for enabling human and AI co-creation. Some existing HAICC models emphasise the dynamics of the interaction, as when Huang and Rust (2022) outline the uses of AI by both marketers and consumers. In turn, they argue that effective collaboration requires the acknowledgment and integration of distinct intelligences, such as the mechanical and analytical intelligence of AI, as well as the contextual, intuitive, and feeling intelligence held by humans. Alternatively, some management-oriented frameworks examine HAICC from socialisation (Makarius et al.

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2020) and knowledge sharing (Chowdhury et al. 2022) perspectives, to address how HAICC might be integrated within the organisation. Such efforts depend on factors such as AI trust, skills, job clarity, and integration; knowledge sharing also appears key for facilitating socialisation and business performance (Chowdhury et al. 2022). However, in recognising the need for continued examinations of such factors (Merhi 2023), a review of initial marketing studies of how AI creatively generates product advertisements and storyboards (Chaisatitkul et al. 2024), images (Hartmann et al. 2024), or text (Reisenbichler et al. 2023) reveals that thus far, no clear assessment has specified the factors underlying HAICC dedicated to creative brand voice efforts.

Creative collaboration warrants its own, specific focus, as the exchange between human and AI is uniquely challenging due to interaction spontaneity in this context (Davis et al. 2016). General human–computer interactions can be relatively less complex; HAICC is innately complex and challenging, because creativity is open-ended and requires collaborative problem solving (Rezwana and Maher 2023). In design process management and human–computer interaction literature that deals with creativity, Wu et al. (2021) propose a loop, in which AI gets integrated at a “perceive” stage to deal with big data and then proceeds to “facilitate” thinking, achieve “express” outcomes through rapid exploration, “complement” humans by leveraging its respective strengths, and perform a “test” through simulation and analysis. A proposed framework for interaction design instead characterises HAICC according to the interaction dynamics that drive effective co-creation for creative output (Rezwana and Maher 2021, 2023), including “collaboration style,” or who does what, when, and for which task; “communication style,” which reflects human–AI dialogue and the communication channels available; and the interaction with the shared creative output, such that the framework highlights the roles of the “creative process” and “creative product.”

With their focus on the organisational level, such management-oriented frameworks for facilitating HAICC largely ignore factors at wider, societal levels. In contrast, design-oriented frameworks usually deal with processes between an individual user and AI. In this sense, the literature spanning these domains has not established a comprehensive perspective on the use of HAICC for creative brand voice, as it arises from brand management at individual, organisational, and societal levels. To address this gap, the current research adopts a conceptual approach and accounts for multiple research domains and existing theoretical models, seeking to expand these insights and thereby advance theory development (Vargo 2023; Vargo and Koskela-Huotari 2020). In turn, it proposes the *Human–AI Co-Creation for Creative Brand Voice Framework* to organise and manage HAICC, highlighting factors that facilitate efficiency and effectiveness at three levels: (1) individual, (2)

organisational, and (3) societal. Distinguishing these levels is critical, because different factors emerge as relevant at each of them. Accordingly, researchers can and should apply the proposed framework in their continued investigations of HAICC.

Background

Creative brand voice

Creativity is a complex cognitive process, involving the generation of original and valuable ideas, solutions, or expressions. It requires effectiveness and originality to create something novel for a specific group of users at a given time (Stein 1953). In marketing, creativity also reflects the generation of new and useful ideas and concepts, particularly when developing and designing products, services, or brand communications (Lies 2021). For example, creative brand voice implies the generation of text, images, videos, sound, music, and designs. Moreover, creativity evolves alongside transformative technological changes (Corazza 2016), such as the dramatic changes wrought by AI, which can display creativity, along or as an augmentation of human creativity (Feuerriegel et al. 2024). This study accordingly focuses on creative rather than functional uses of AI, together with the processes involved in creating, publishing, and protecting creative assets.

Efficiency and effectiveness

Efficiency and effectiveness are fundamental organisational goals that also provide frequently used measures of organisational performance (Mouzas 2006). In a brand management context, Rahman et al. (2018) define efficiency as the capacity to limit inputs, such as budgets allocated to brand awareness efforts or R&D investments to drive innovation, while still maximising brand equity, as a key brand management output (Rahman et al. 2018). Thus, the primary focus is the use of resources relative to the output those resources produce for the brand (Bonoma and Clark 1988).

When AI assists in generating brand voice, effectiveness standards imply it must enhance the brand identity without evolving into an own brand (Knapp 2017) and offer original content, while still remaining consistent with the established brand to protect its existing positioning, differentiation, recognition, and recall (Munoz and Kumar 2004). Effective brand management also should contribute to overall organisational goals, so relevant metrics might address how the brand performs in relation to customers’ behaviours and attitudes towards the brand, as well as the resulting financial returns (Mirzaei et al. 2011; Munoz and Kumar 2004).



To determine the efficiency and effectiveness of HAICC, various perspectives can be informative. First, individual human employees (herein “brand professional”, referring to, for example, marketing, brand, social media managers), and AI technology need to achieve efficiency and effectiveness in their interactions, which take place during operational processes. Second, for brand management and an overarching organisational perspective, efficiency and effectiveness pertain to efforts to structure, organise, and facilitate HAICC. Third, the external environment in which the brand operates features social and legal norms, which require consideration in terms of how well they are met.

Human–AI Co-Creation for Creative Brand Voice Framework

To identify factors that contribute to HAICC and develop a meaningful structure, the current research starts with a re-examination of existing models. This review helped inform the three levels for organising the factors relevant to HAICC. In particular, previous research identifies how various contexts influence technology acceptance within an organisation, as well as the individual behaviour of members of those organisations. For example, the technology–organisation–environment (TOE) framework (Tornatzky and Fleischer 1990) cites three important contexts: technological, pertaining to the existing and new technologies in the market that are available to various degrees and that offer distinct advantageous characteristics and attributes, such that the organisation must possess sufficient infrastructure to support them; organisation, which consists of internal structures and hierarchies, communication processes, size, (slack) resources, the culture, and management support; and environmental, referring to the nature of the industry, market and customer preferences, and government and policy regulations.

Extensions of the TOE framework add some individual factors, such as subjective norms that reflect how others use or accept a technology and thus influence the focal user (Awa et al. 2017). Such individual factors represent the core of socio-ecological models that seek to explain the interplays among individual, societal, organisational, and environmental factors and their effects on behavioural change. Adaptations of Bronfenbrenner (1977) model also identify factors at an individual level, including knowledge, skills, and attitudes, then add interpersonal factors at a second level, such as social networks. A third, organisational level includes the environment and ethos, and finally, the public policy level entails cultural values and norms, as well as state laws and regulations (Lee et al. 2017).

The novel framework proposed herein shifts focus: Rather than addressing influences on human behaviour, it reflects

a socio-technical systems approach (Feldman 2023) to understanding the factors that support efficient and effective HAICC as a process at the individual level, the management of the interaction at the organisational level, and brand management and protection at the external environment. In line with recommendations to present theoretical frameworks in simplified and generalisable ways (Vargo 2023), Fig. 1 depicts the proposed *Human–AI Co-Creation for Creative Brand Voice Framework*.

The framework encompasses three levels, resembling the structure of extant socio-ecological models. At the centre are factors pertaining to the AI and individual brand professional level; their purpose is to optimise operational processes between these actors. Factors related to the technology include AI task roles; factors related to the human professional refer to knowledge and skills; and their intersection creates co-creation teaming factors. The middle, organisational, and brand management level encompasses organisational capabilities to manage the interaction, in terms of both technological capabilities, including infrastructure and brand voice database, and human capabilities, including socialisation. At the overarching level, the framework integrates the societal level, which requires compliance with social norms and legalities in the broader environment, including responsibility, accountability, AI transparency, and brand voice copyrights. This paper now discusses the three levels relevant for brand management and the factors in each.

Individual level

At individual level, focus lies on factors contributing to efficiency and effectiveness in operational processes, for instance, planning and producing text, image, video, or sound, between individual brand professional and AI. The first factor is technological, related to the allocation of AI task roles; the second factor is human, pertaining to required knowledge and skills. Intersecting AI and human is the factor co-creation teaming.

AI task roles

Some set of functional group roles gets designated or assigned to an individual member of a team, whether by a leader or through natural developments due to team dynamics (Belbin 2012; Siemon 2022; Van de Water et al. 2008). These task roles facilitate task completion and individual performance, which then contribute to group goals. Although Nass et al. (1996) examine computers as teammates and investigate how humans treat systems in collaborative work, they ignore those computers’ roles within teams. Role clarity should enhance collaborations, by fostering coordinated, cooperative working environments (Saks and Ashforth 1997). However, because this literature



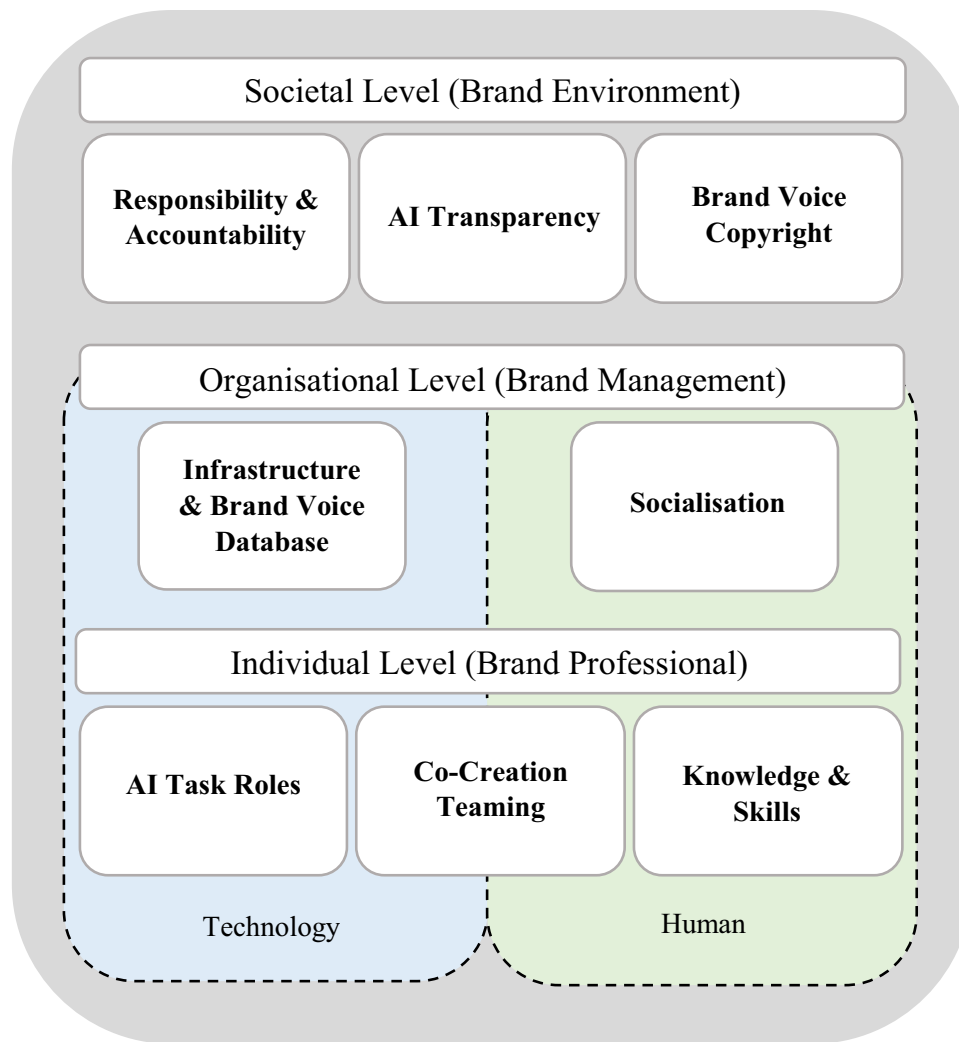


Fig. 1 Human–AI Co-Creation for Creative Brand Voice Framework

tradition largely focuses on human teams, the roles for AI in collaborative teams must be defined (Siemon 2022). Establishing clear roles, tasks, and expectations of AI can reduce ambiguity, negative expectations, and uncertainty, which should enhance both performance and commitment (Brougham and Haar 2018; Chowdhury et al. 2022). Considering the many AI task roles identified in prior research, when applied to a HAICC for creative brand voice process, they might be illustrated with the four-stage creative process model (Wallas 1926), which comprises preparation, incubation, illumination, and verification. Then, in pursuit of efficiency and effectiveness, AI task roles should be integrated in specific stages in the HAICC process.

In the initial preparation stage, the *coordinator* (Siemon 2022) and *definer* (Rezwana and Maher 2021; 2022) task roles are required for efficiency, because AI facilitates human cognition in such early stages by identifying the right questions, providing viable alternatives and framing,

and then re-framing ideas (Feldman and Fraser 2017). In a *coordinator* role, AI also can contribute to efficiency by planning and allocating resources; guiding the creative process to keep it on track; and persuading, motivating, and assigning tasks to human brand professionals. Human acceptance of AI task delegation is partially evident, since task delegation improves self-efficiency, in turn enhancing task satisfaction and performance (Hemmer et al. 2023). As a *definer*, the AI can set specific goals for the human, before they begin the creative challenge, which should contribute to efficiency by saving time. Turning to effectiveness, key AI task roles include *creator* (Rezwana and Maher 2021; Siemon 2022) and *expert consultant* (Bader et al. 1988; Bittner et al. 2019). The AI *creator* gathers information and suggests ideas to spark further ideation. In an ideation process, AI inconsistencies and hallucinations can represent strengths, because AI can efficiently generate multiple, diverse ideas, more



so than humans (Girotra et al. 2023; Terwiesch 2023). For example, if used to create marketing storyboards, AI significantly reduces the time required while also producing unique, consistent visuals (Chaisatitkul et al. 2024). Finally, as an *expert consultant*, AI can provide guidelines and information about specific research tasks that arise.

Then in the incubation stage, idea germination often seems to occur unconsciously, but deep thoughts and developments of initial ideas and connections can be supported by dialogue and exchanges with others (Hall et al. 2008). In terms of effectiveness, using AI as a *second opinion* (Bader et al. 1988) allows for simultaneous task execution, as well as comparisons of initial ideas or concepts, which might further inspire human thought. In addition, AI can support cognitive processes and evoke reflections among humans (Feldman and Fraser 2017) in its role as *creator*, thereby assisting in ideation and the exploration of further options that build on the initial ideas or concepts introduced by the human brand professional.

During illumination, implying a moment of insight into well-developed ideas or concepts, AI can contribute to effectiveness by achieving superior results and outcomes, such as through evaluations of concepts as an *evaluator* (Bader et al. 1988; Bittner et al. 2019; Rezwana and Maher 2021) that checks for inconsistencies, finds areas for improvement, and suggests refinements. If ideas or concepts need further work, AI in a *creator* role might offer alternatives. Notably, research has shown that AI can produce equally good or better brand visual than humans can, so their collaboration should lead to notable effectiveness gains (Hartmann et al. 2024).

Finally, during verification, AI can assume three roles that increase effectiveness. As an *expert consultant*, AI meticulously analyses ideas or concepts, then expands on them to provide greater detail and substance. As an *automator* (Bader et al. 1988; Siemon 2022), it can execute human tasks quickly and in detail to find optimal solutions, and as a *doer* (Siemon 2022), it brings ideas or concepts to life and communicates or implements them in the world, minimising wasted time and human effort. Because all these AI roles for creative brand voice can facilitate efficiency and effectiveness, assuming they are evoked in the relevant phases, this discussion suggests the following propositions:

P_{1a} To achieve efficient and effective HAICC, clear AI task roles must be formulated according to the stages of the creative brand voice process.

P_{1b} To achieve efficiency in the HAICC for creative brand voice process, AI should take roles as coordinator, automator, doer, and definer.

P_{1c} To achieve effectiveness in the HAICC for creative brand voice process, AI should take roles as creator, evaluator, second opinion, and expert consultant.

Knowledge and skills

The second factor at the individual level relates to the human employee; individual brand professionals must work efficiently and effectively with AI systems. Zirar et al. (2023) suggest a categorisation of “technical”, “human”, and “conceptual” skills. Technical skills imply competencies and capabilities involving IT literacy and proficiency in using AI tools and platforms; human skills involve managing and coordinating people to share knowledge, collaborate, delegate, and negotiate. Finally, conceptual skills imply that people find solutions by working with various topics, ideas, and concepts. Such skills reflect the need for human innovation and creativity, such that brand professionals must uncover trends and find relationships that AI has not or cannot identify. In turn, humans need greater competencies related to understanding, validating, and visualising AI-generated results (Jarrahi et al. 2023). Conceptual understanding also encompasses domain knowledge, and when creativity is augmented by AI, it allows for greater cognitive capacity for more challenging tasks; irrespective of enthusiasm or motivation, gaps in such necessary knowledge limit human creativity (Jia et al. 2024).

To achieve efficiency in HAICC for creative brand voice, some minimum level of technical skill is needed, because people ultimately use the AI tools and platforms. Understanding how they work and how to navigate the interfaces saves time in work processes. However, a brand professional does not need high-level technical skills; AI tools tend to be user-friendly and increase the performance of even low performing, low-skilled, or inexperienced employees (Brynjolfsson et al. 2023; Dell’Acqua et al. 2023). Because AI’s brand images often are judged as high in creativity and preferable, compared with those designed by human freelancers (Hartmann et al. 2024), such tasks seemingly can be brought in-house, enabling individual brand professionals to achieve huge cost reductions.

Brand professionals’ conceptual skills may be even more important for HAICC for creative brand voice. That is, technical skills pertain to the user interface level, and human skills, while valuable, are required in every team, whether with human or AI. However, human brand professionals need domain-related expertise related to the brand strategy, design, and established voice before they can co-create with AI and still ensure brand consistency and brand fit. The ability to guide and control AI in accordance with such knowledge is critical to not only the creative process but also overall project success (Turchi et al. 2023). For example,



to prompt AI appropriately, the human brand professional must communicate key needs. That is, to achieve results that align with established brand voice, as well as to evaluate AI creative outputs meaningfully, humans must possess knowledge on the topic and the brand (Baumgarth et al. 2023). Therefore:

P_{2a} For brand professionals to achieve efficiency in HAICC for creative brand voice, they must possess basic AI and human skills.

P_{2b} For brand professionals to achieve effectiveness in HAICC for creative brand voice, they must possess advanced conceptual skills and deep domain knowledge.

Co-creation teaming

At the intersection of AI and human agents, teaming arises. Teamings are modes of collaboration integrating human and AI (Dubey et al. 2020), considering their attributes and how they co-create (Bouschery et al. 2023). To define teaming, it can be insightful to identify who takes the lead, has the power to intervene in the creative process, and makes final decisions over outputs. Literature identifies five main teaming modes, along a spectrum: (1) teaming human, (2) teaming human lead + AI assist, (3) teaming hybrid human–AI, (4) teaming AI lead + human assist, and (5) teaming AI.

Starting with *teaming human*, AI is minimally integrated and functions mainly as a problem-solver (Turchi et al. 2023), offering support for creativity, such as through basic visualisation and search (Grabe et al. 2022). It does not contribute independently to the creative process (Davis et al. 2015). This minimal use of AI threatens to diminish employees' performance, compared with that achieved by brand professionals working with AI, especially for ideation and product development involving analytical thinking, writing, and creativity (Dell'Acqua et al. 2023). On the other end of the spectrum, *teaming AI* means that AI operates without much input or supervision from humans, taking over whole elements of the creative process as a problem finder rather than solver; it is creative in itself (Davis et al. 2015; Turchi et al. 2023). In creativity contexts, this mode raises concerns that humans get reduced to prompters. Even when AI is well-trained and produces “good” creative results, reflecting pre-defined parameters, it might induce only homogeneous results (McCormack and D'Inverno 2014).

Intersecting the ends of the spectrum is the co-creation space and the key discussion surrounds whether AI or human leads the creative process (Rezwana and Maher 2022). Generally, individuals deliver better results and experience greater intrinsic motivation when collaborating (Carr and Walton 2014). *Teaming AI lead + human assist* involves human brand professionals supervising and monitoring task execution, intervening only if necessary. This

teaming is efficient if the brand professional is capable of supervising multiple systems and can interject to address failures (Methnani et al. 2021). When the AI leads, humans are responsible for performing audits, gathering input from AI and human members to compare and identify gaps, assess performance, and adjust as necessary (Grønsund and Aanestad 2020). Despite evidence that AI surpasses humans when generating brand images, with regard to their quality, realism, and aesthetics (Hartmann et al. 2024), as well as when creating brand text (Reisenbichler et al. 2023), brand professionals still must check that the brand voice remains consistent and outputs display brand fit. If brand professionals rely too much on AI systems, creativity suffers; if they fail to correct AI errors, it may lead to brand harm (Iskender 2023; Van Dis et al. 2023). However, if the brand professional does not trust AI and gets involved too frequently, it leads to inefficiency (Methnani et al. 2021).

Instead, with *teaming human lead + AI assist*, humans influence decisions throughout the process, actively working to improve the accuracy and efficiency of AI. This teaming is effective for situations marked by high complexity or uncertainty, or that require perfect execution (Leeper et al. 2012; Methnani et al. 2021). In terms of brand management, such situations tend to be external to the brand, such that the brand interacts with stakeholders beyond the internal team, including customers and consumers. Humans also must be responsible for training AI continuously and augmenting the process, even if AI assists in decision-making (Schroder et al. 2022). In collaborative settings where humans lead managerial tasks, participants working with AI achieved 57% higher productivity than the group working without and additionally reported a 62% higher satisfaction level with their performance (Sowa et al. 2021). In design literature, when participants draw collaboratively with AI, they prefer to take the initiative, then have AI complete their work, while retaining the right to make decisions throughout the entire process (Oh et al. 2018). However, human involvement at every step can be inefficient and introduce bottlenecks, especially if the humans lack complete information and thus influence AI ineffectively (Van der Stappen and Funk 2021).

Finally, in *teaming hybrid human–AI*, both human and AI actors enter a tight interactive loop, in which they both suggest, generate, assess, adjust, and choose creative outputs in response to each other (Deterding et al. 2017). Grabe et al. (2022) describe AI as co-designers in creative tasks and suggest a framework for interaction. For example, during a curation stage, humans initiate the process, AI learns, both create artefacts, humans select, and (once the training is complete) AI later takes a greater lead in the creative process. The greater effectiveness that results reflects the potential for more unique or creative outcome generation, due to their close, involved interactions, as well as greater



efficiency due to the diminished time required when two entities work on ideas and concepts.

For creative brand voice, excluding AI might lead to missed opportunities and a lack of competitiveness. Brand professionals increasingly recognise the advantages of combining their efforts with AI to achieve efficiency and effectiveness; they also express positive perceptions of AI for their own work and for the brand (Chaisatitkul et al. 2024). However, autonomous or even dominant AI might be problematic. First, it could result in a homogeneous brand voice, no longer unique to the brand. Brand professionals responsible for creative brand voice thus must ensure the established brand voice is recognisable to both employees and consumers, such that their control over the process and evaluation of outputs remains crucial. Second, drawing on HAICC studies pertaining to artistic processes and outputs, regardless of its physical characteristics, humans value the infusion of human experience into the art they see (Bellaiche et al. 2023) and algorithmic aversion appears heightened in settings that necessitate emotion and subjectivity (Messer 2024). Therefore:

P_{3a} For routine creative tasks and internal processes, efficiency can be achieved by teaming AI lead + human assist.

P_{3b} For complex creative tasks and external outputs, effectiveness can be achieved by teaming human lead + AI assist, with the potential to progress to hybrid human–AI.

Organisational level

At the organisational level, factors for efficiency and effectiveness relate to management capabilities that facilitate, organise and manage HAICC for creative brand voice. This involves establishing technological capabilities, including infrastructure and brand voice database for AI systems, and facilitating human capabilities by managing and allowing employees to co-create through socialisation with AI technologies.

Infrastructure and brand voice database

Infrastructure is a facilitator; AI systems require advanced technological structures (Cao et al. 2021). Among the general success factors that determine AI implementation, Merhi (2023) identifies those in the “technology” category as the most significant. For example, “IT infrastructure”, which spans hardware, software, computing power, and storage, must be installed and tested to ensure AI systems will be operational. In addition, “security and confidentiality” refer to safe data handling and protections against breaches or mishandling, which contribute to efficiency. If optimised to

match the brand voice, prior to organisational roll outs, they can avoid wasted time and effort needed to rectify mistakes or alter the entire system later. Protecting data also fosters brand trust.

“Integration complexity” is another consideration; existing systems must be able to communicate and integrate with new AI systems, and “scalable and flexible systems” are required for data conversion. In AI introductions, both are relevant challenges. With regard to efficiency, systems capable of communicating and being integrated with established systems reduce the time and effort required to ensure the same quality of input in the new and established systems. For effectiveness, integrating AI with data that are relevant for training systems with regard to the brand voice and processes can lead to superior, more valuable brand outcomes. A scalable and flexible system also enables better data conversion, adaptable to future scenarios, which is crucial considering the speed of technology developments and trends.

“Data issues” can arise, with regard to the accuracy and reliability of data input, which requires avoiding AI output that is incorrect, misleading, or harmful. When data are of “insufficient quality”, decisions based on them will suffer as well. These factors are important for maintaining operational AI systems. Brand management must oversee the data used to train and maintain the system, because relying on inaccurate or incorrect data will produce outcomes that are not in line with the established brand, which can result in negative consequences such as a lack of brand recognition or brand harm.

Beyond infrastructure considerations, actual AI tools or platforms should be selected according to the quality of the output and, arguably, how accurately they reflect brand voice. When comparing the brand images generated by AI, such as DALL-E and Midjourney, research identifies some considerable differences across systems, and selection strongly influences performance (Hartmann et al. 2024). Depending on brand goals and needs, the choice of AI should reflect the most appropriate option. Key considerations include whether to use free, standard AI tools or to work with AI tailored to specific a brand voice (e.g. Neuroflash brand voice AI). Tailored AI, or creating proprietary algorithms trained on established brand voice, represents an important potential development for creative HAICC. Using training data that are tailored to the brand ensures that the input data conform to established brand voice. Such efforts even could produce a brand voice database, the benefits of which include more effective outputs, because it reflects brand-specific data, as well as greater efficiency, by supporting faster content production, with the assurance that the data and generated outputs fit the brand, which should maximise the chances of brand consistency across content and channels. Therefore:



P₄ To achieve efficiency and effectiveness in HAICC implementation, brand management should establish robust infrastructure and also create a brand voice database to enable creative, brand fit, and brand safe voice in all phases, from data training to output.

Socialisation

A technology perspective focuses on making AI usable for creative brand voice; a human perspective focuses on how brand professionals can enable co-creation with AI by managing expectations and accounting for factors such as fear of displacement, identity threats, and lack of trust in AI. The “dark side” of AI must be addressed and overcome to ensure brand professionals do not sense a loss of independence or competence (Mirbabaie et al. 2022). Socialisation is a transitional process, through which newcomers shift from being external to an organisation to internal members (Bauer et al. 2007). Management strategies that incorporate socialisation are effective when the change affects job roles and tasks (Klein et al. 2015).

According to the AI socialisation framework (Makarius et al. 2020), AI and humans become integrated in various stages, and their socialisation enhances human learning, which in turn leads to greater productivity, collective intelligence, and competitive advantages. During an initial “sensing” phase, proactive familiarisation with AI integration helps brand professionals recognise and understand various AI applications, such that they can navigate through uncertainty, acquire preliminary insights, and retrieve information. For example, AI onboarding plans can enhance people’s awareness of the potential roles AI can unlock, establish transparent communication, provide resources and specialised training initiatives, and delineate the ethical boundaries of AI applications, including both ethical decision-making and human-centric issues. In the “comprehension and action” phases, the AI and brand professional interact, so socialisation processes should focus on clarifying the job and the factors that influence change, trust, and job designs.

For efficient and effective HAICC for creative brand voice, the initial “sensing phase” seems especially important. By familiarising brand professionals with AI, it is possible to reduce the time wasted when interacting with systems, while also encouraging better results. An early focus on preparing humans and providing creative training and work-integrated learning thus appears relevant (Zirar et al. 2023); perhaps professional certification should be part of education initiatives (Theodorou and Dignum 2020). Introducing AI in the work environment is anticipated to require extensive reskilling efforts to address evolving talent requirements (McKinsey 2023), and the organisation’s likelihood of achieving a substantial return on its AI investments

diminishes unless it commits to enhancing employees’ skills and expertise (Ransbotham 2020). Such combined reskilling, upskilling, training, and knowledge sharing should be continuous, all of which can be facilitated through human resource management (HRM).

Arslan et al. (2021) identify some challenges surrounding control, analysis, and performance evaluation, which HRM also can address by clearly communicating expectations, explaining possible changes in job tasks, and overcoming technology anxiety with training. Assessments of AI implementation also identify a lack of top management support, ambiguous strategic vision, and non-visible benefits as major boundaries to human–AI integration (Merhi 2023). Therefore, management’s commitment to setting goals and using HRM to bring visions to life throughout the brand culture appears pivotal. Knowledge sharing and knowledge management will be particularly critical too, as ways to facilitate socialisation with AI (Chowdhury et al. 2022). The resulting proposition suggests:

P₅ To achieve efficient and effective HAICC for creative brand voice, management must use HRM to ensure early socialisation with AI and set clear goals to manage expectations.

Societal level

At the societal level, relevant factors relate to questions of how to manage HAICC outputs while still complying with legal and social norms. Current discussions highlight the need for corporate digital responsibility (CDR), a proposed set of values and norms for organisations that reflect public opinion, legalities, technological developments, and industry factors, as well as customer- and firm-specific ideas (Lobschat et al. 2021). This ethical perspective is critical to AI contexts (Kunz and Wirtz 2023). Key factors at this level include brand management that upholds responsibility and accountability, as well as AI transparency. Beyond conforming to norms, the brand voice must be protected.

Responsibility and accountability

Responsibility pertains to the duty to perform a task or adhere to a rule; accountability instead refers to the capacity to provide responses and explanations of authority, interrogations of external (legal) and internal (moral) responsibility, and limitations that effectively constrain the powers entrusted to individuals or entities through delegation (Novelli et al. 2023).

A first facet of responsibility pertains to ethical and moral responsibilities towards society overall, which requires prioritising humans over AI (Rezwana and Maher 2022). The second relates to implementing responsible AI systems,



which includes ensuring algorithms are devoid of objective errors and decisions, as well as ethical or moral lapses. The responsibility for avoiding objective errors calls for the responsible use of software development practises that foster code robustness, maintainability, and reusability, while simultaneously guaranteeing the system's technical resilience and mechanisms for tracing AI decisions (Methnani et al. 2021). Regarding ethical or moral lapses, AI must align with human values, demonstrate ethical behaviour, and render morally justifiable decisions (Lobschat et al. 2021); in detail, it must avoid biases and harmful consequences originating from the algorithms, which might manifest as favouritism, hate speech, or stereotyping. Such issues also can arise from inappropriate training data, inadequacies in evaluating output, or failures to adjust continuously to lessons from prior outcomes (Ray 2023). Avoiding ethical and moral lapses and biases also can strengthen brand safety measures, as a way to protect brand reputation.

Turning to accountability, policy makers can mandate and promote algorithmic accountability (Novelli et al. 2023) by shaping policies, offering guidance, establishing regulations, and developing legal frameworks for AI adoption (Zirar et al. 2023). Existing ethical guidelines do not fully consider all the implications for creative collaboration (Llano and McCormack 2020); however, the European Commission Artificial Intelligence Act represents a milestone legal regulation. This comprehensive law will govern the uses of AI throughout the European Union; its primary aim is to ensure that AI systems employed within the EU adhere to essential principles of safety, transparency, traceability, non-discrimination, and environmental sustainability (European Parliament 2023). Its passage implies major consequences for brands, which must develop frameworks and practises to ensure accountability. It remains critical to keep up to date with legislation and ensure that all systems, management, and employees are equally well versed in it.

Responsibility and accountability questions in HAICC arise mainly in three phases: during data training and input, during the process of co-creation, and when evaluating output. When training AI systems for creative brand voice, such as to generate an appropriate brand image, text, video or sound to share externally, the data must be carefully input and trained, in accordance with the values and language expressed by the established brand voice. At an initial stage, bias can arise if the AI is trained on data that are already embedded with pre-existing human biases, opinions, and prejudices (Dwivedi et al. 2021). Determining ownership of the data sets used to train the AI might offer a viable way to allocate responsibility (Ray 2023). A central expectation for accountability also should establish that those involved in designing, developing, and deploying AI systems follow all applicable standards and legal requirements, throughout the lifecycle of the AI (Novelli et al. 2023).

In the co-creation process, each entity is responsible to maintain a bias- and error-free brand voice, but they should be guided by clear codes of conduct. Mistakes and errors can be avoided by limiting the extent of reliance on AI to generate creative brand voice; brand management should take on this responsibility (Ray 2023). Accountability then exists within the AI lifecycle; for example, deployment tasks should focus on using, monitoring, and maintaining AI systems in accordance with specific contextual rules (Novelli et al. 2023).

Finally, during evaluations, a monitoring system with continuous feedback loops should be established for all co-created output. Efficiency and effectiveness can emerge from clearly outlined rules for conduct and protocols of processes and decisions, which then contribute to upholding brand safety measures that influence end users' brand perceptions (IAB Europe 2024; Lee et al. 2021). Certain accountable "agents" can be identified, whether on an individual basis, as corporate entities, collectively, or according to their hierarchical roles and functions (Novelli et al. 2023). According to these three phases, the following propositions emerge:

P_{6a} During data input, achieving efficient and effective creative brand voice requires ensuring the quality, reliability, and accuracy of training data.

P_{6b} For the process of co-creation, achieving efficient and effective creative brand voice requires establishing guidelines consistent with brand values.

P_{6c} During evaluation, achieving efficient and effective creative brand voices requires the enforcement of monitoring measures and evaluation criteria.

AI transparency

Methnani et al. (2021) interpret transparency as "trust", "verifiability", "fairness" and "contestability". "Trust" implies an understanding of agents' behaviour when they interact with the wider environments. Presenting transparency-related information helps refine mental models and calibrate trust in automated systems. "Verifiability" involves traceability and maintaining a comprehensive record of decision-related information. Auditing frameworks extend beyond technical aspects; they validate decisions, policies, and activities undertaken by all agents throughout the AI's lifecycle. "Fairness" relates to the decision-making by algorithms and the data used to train machine learning systems that mimic social biases. Finally, "contestability" goes beyond explaining why a decision was made, to reflect the broader socio-legal context in which the decision was formulated.

For trust, transparency is beneficial because it limits algorithmic aversion; a lack of transparency instead contributes to negative perceptions of algorithmic agents (Musick et al.



2021). The inherent black-box nature of AI and the aversion it induces tend to arise in the absence of comprehensive understanding of how algorithms function and arrive at decisions (Mahmud et al. 2022). Such a black-box can be opened by making the algorithms understandable, explainable, interactive, and integrative of users (Chander et al. 2018; Mahmud et al. 2022). Explanations of AI decision-making also can clarify the underlying rationale (Gönül et al. 2006). However, explanations should not be employed in every step of an AI process but rather should be specific to cases that demand compliance, when critical for the end user to understand the tool's optimal usage, if transparency has the potential to enhance system performance, and when it can inform fairness evaluations (Blackman and Ammanath 2022).

Transparency as “fairness”, “verifiability” and “contestability” (Methnani et al. 2021) also is increasingly important for creative brand voice, considering recent legal developments. For example, the EU Artificial Intelligence Act features proposed rules on transparency and requires brands to comply with requirements for disclosing AI-generated content, preventing illegal content generation through model design, and providing the copyrighted data used in training (European Parliament 2023). Companies such as Google require mandatory transparency for political advertisers by enforcing disclosures of AI-generated content (Reuters 2023). Although studies in creative fields identify some negative perceptions of AI and preferences for human creators (Bellaiche et al. 2023), studies of AI disclosure in branding contexts, for instance written text, suggest no negative authenticity perceptions or impacts on brand attitudes (Kirkby et al. 2023). On social media platforms such as Meta and Instagram, when brands use AI tools to create or edit an image, video, text, or sound, the content is labelled with the watermark “Imagined with AI”; when content created by third-party AI tools gets uploaded, it takes the label “AI Info” (Instagram 2024). Therefore, the following proposition is formulated:

P₇ To achieve efficient and effective HAICC for creative brand voice, brands must display and provide transparency in AI usage.

Brand voice copyright

Finally, humans and algorithms progressively co-create dynamically, evolving from hierarchical structures to something more ambiguous (Benedikter 2021). The creative brand voice created by AI can be undistinguishable from human brand professionals' contributions, such that concepts of who or what has authorship or owns content, as well as which content is copyrightable, become fuzzy. The lack of copyright law and protection of AI-generated

content is controversial and problematic, especially when the AI generates outputs that, if created by humans, would be considered creative and eligible for such protections (Kalpokienė and Kalpokas 2023). Yet if AI authorship is acknowledged, the allocation of ownership rights becomes a pressing question; in conventional copyright law, ownership hinges on the concept of authorship (Xiao 2023). Such issues become even more complex when AI-generated outputs cannot be linked to human involvement or intervention. Because AI output is not acknowledged as “artwork” in current copyright laws, it is not eligible for legal protection (Ajani 2022).

Similar challenges arise for HAICC used to produce creative brand voice, which can include images, logos, videos, or sound that might be difficult to protect and thus at risk of being integrated into AI training data that later might be leveraged by another brand. Using AI to produce brand voice thus could lead to infringements on another brand's or artist's assets, even if unintentionally. If brands rely on AI trained on countless available data, there is a likelihood of basing the output on protected colours, shapes, forms, and sounds. Already, multiple music publishers have sued the AI platform Anthropic for copying large amounts of copyrighted works (Duran 2023). Digital artists and platforms such as Getty Images also have filed copyright infringement lawsuits against image-generating AI companies like DeviantArt, Stability AI, Midjourney, and LAION, alleging that the images that provided the training for their AI were used without permission (Escalante-De Mattei 2023).

To ensure efficiency and effectiveness, brand management thus must take care to avoid inadvertently using assets from other brands and safeguard their own HAICC outputs by protecting assets and focusing on data protection. These challenges suggest an opportunity for brands: They could create their own databases to train AI algorithms, carefully curate the data to use in these processes, and train AI using their own brand voice assets, which provide ongoing, constantly updated guidelines.

P_{8a} To achieve efficient and effective HAICC for creative brand voice, brands should build their own databases, which can protect AI-generated assets and seek to attain copyrights.

P_{8b} To achieve efficient and effective HAICC for creative brand voice, brands must avoid infringing on other brands' assets.

Discussion and future research

This work takes a conceptual view on factors that can facilitate efficient and effective HAICC for creative brand voice. Across individual, organisational, and societal levels, these



Table 1 Research agenda for HAICC in creative brand voice

Individual	Organisational	Societal
AI task roles	Infrastructure and brand voice database	Responsibility and accountability
Which AI task roles lead to the greatest efficiency and effectiveness?	How does personalised infrastructure compare with a standard package?	What guidelines, codes of conduct, and monitoring measures are needed to guide brands, efficiently and effectively?
How should AI be designed for the greatest usability?	What is the status of organisations' AI-readiness?	AI transparency
Knowledge and skills	Socialisation	How should brands disclose AI-generated or co-created outputs?
Which skills are the most valuable for HAICC?	How can brand management, together with HRM, facilitate socialisation for HAICC?	Where in the creative brand voice process must brands show transparency?
What exact knowledge is required?	Are there differences across brand managers who have been socialised with AI and those without such socialisation?	Brand voice copyright
What are the prerequisites of knowledge and skills that a brand professional must possess?		How can brands protect AI-generated and co-created assets?
Co-creation teaming		What laws currently exist globally, and how can these be compared?
Which teaming mode is most efficient and effective?		
Are different teaming modes required for different employees, based on their attitudes and technology expertise?		

factors also reveal opportunities for further research avenues (see Table 1).

At the individual level, AI task roles are theoretical (e.g. Rezwana and Maher 2022; Siemon 2022), indicating the need for empirical investigations that refer to real-life creative brand voice processes. Testing AI in various roles would enhance understanding of both technological capabilities and human acceptance. Each brand professional will have different attitudes towards AI, varying degrees of innovativeness and openness, and levels of experience with technology, each of which can prompt general desires to exploit AI in various roles, or else dismiss the technology entirely. In turn, research is needed to address design and usability questions. The knowledge and skills factor encompasses conceptual skills and deep domain knowledge (Zirar et al. 2023), raising questions about which skills employees display most predominantly, as well as which skills and knowledge levels actually lead to greater efficiency and effectiveness. A further interesting perspective pertains to whether AI can act as a knowledge or skill facilitator. The co-creation teaming factor suggests that co-creation with a human in the lead is most advantageous, but this finding does not account for the potential progression of AI as it becomes ever more personalised and flexible. A hybrid teaming of human–AI work for creative brand voice should be investigated; empirical investigations of all five teaming modes might assess which one(s) results in greater efficiency and effectiveness in practice.

At the organisational level, the infrastructure and brand voice database factor highlights the importance of a robust infrastructure (Merhi 2023), combined with a careful process for selecting AI tools. Further studies could compare brands as they reach various stages of introducing, using, and monitoring the infrastructure to develop best implementation practices. Continued research into the socialisation factor also might examine it specifically in a creative context, or else conduct experiments to compare brands that exhibit an early focus on AI socialisation versus that that do not. A multidisciplinary approach could clarify how HRM facilitates AI socialisation in HAICC contexts.

Finally, at the societal level, responsibility and accountability factors need research to establish greater clarity for brands. Establishing guidelines, codes of conduct, and monitoring measures will be paramount for navigating societal norms and creative brand voice processes effectively and efficiently. But what do they look like in a real-life setting, and is it even possible to formulate best practises? Efforts to foster more trust and comply with legal norms, as are evident in the AI transparency factor, also need closer inspection. To measure transparency and disclosure effects, researchers might assess the differences that arise between using an icon versus text to disclose AI input; research also is needed to specify if brands should be transparent throughout the entire process or only with regard to generated output seen widely. The brand voice copyright factor also provides avenues for further research,



possibly related to specific legislation in a particular geographical location, because the rules and required conduct depend on where the brand operates. In particular, brands need guidance regarding how they might protect their own AI-generated or co-created assets and also avoid infringing on other brands' assets.

Because AI and the legal standards related to it continue to develop rapidly, the proposed framework was designed explicitly to avoid temporal constraints. Empirical tests of the framework might focus on each level or factor separately, and thus rely on quantitative testing, or else on the overall framework, which implies the need for a qualitative case study or action research. Finally, studies might adopt a broader approach and apply the framework to other creative fields, such as HAICC for design, innovation, and R&D.

Conclusion

The proposed framework, designed to structure and guide the management of HAICC efficiently and effectively for creative brand voice, highlights factors at three levels: individual (AI task roles, co-creation teaming, knowledge and skills), organisational (infrastructure and brand voice database, socialisation), and societal (responsibility and accountability, AI transparency, brand voice copyright). It emphasises operational processes at the individual level, interaction management at the organisational level, and the environments in which brands operate to manage generated outputs at the societal level. It makes two main contributions. First, the offered theoretical guidance reflects the perspective of higher-level brand management, taking efficiency and effectiveness of HAICC at three defined levels into account. Second, it outlines a broad agenda for further research.

Acknowledgements The author disclosed receipt of the following financial support for the research, authorship, and/or publication of this article. The author gratefully acknowledge financial support from FCT Fundação para a Ciência e a Tecnologia (Portugal) and national funding through the research grant Information Management Research Center—MagIC/NOVA IMS (UIDB/04152/2020).

Funding Open Access funding enabled and organized by Projekt DEAL. FCT Fundação para a Ciência e a Tecnologia, Office of Information and Resource Management.

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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