Designing Engaging Personalities for Conversational AI Agents to Enhance Employee Interaction in an Enterprise Crowdsourcing Context

1. Thesis Context

Conversational agents (CAs) are increasingly adopted by enterprises to explore new opportunities, transforming workplace collaboration and facilitating crowdsourcing. This thesis examines the dual role of CAs (Figure 1): as work assistants and as crowdsourcing facilitators. Acting as work assistants, CAs interact with a wide range of employees, positioning them to gather valuable insights and support collaborative problem-solving. The central research question focuses on how to effectively engage and motivate employees in the crowdsourcing process through CA personality design, an area that remains underexplored. Using the "Computers Are Social Actors" (CASA) framework by Nass et al. (1994), this thesis explores how CA personality design can enhance human-CA interaction, increasing employee engagement.



2. Methods

This thesis employs the Double Diamond design method in Figure 2, structured around the central research question. In the Discover phase, a literature review was conducted in two areas: the context of conversational crowdsourcing within enterprises and CA design methods, particularly CA anthropomorphism. During the Define phase, findings on user engagement and CA personality models were synthesized to develop initial hypotheses, leading to the creation of preliminary CA personality archetypes for testing. Following a pilot test, the design framework and archetypes were refined. Finally, through prompt engineering, these archetypes were translated into the design outcome: three GPT-4-based CAs.



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Figure 1 - Two roles of Internal CA

Figure 2 - The design process of this thesis

3. Design Proposals

This thesis presents three distinct CA personality archetypes developed from initial hypotheses and pilot study findings, each combining specific personality dimensions and matching language styles. These archetypes were designed to enhance user engagement and interaction within an enterprise context

1. The Empathetic Archetype: Objective: To create friendly and trustworthy interactions.

Personality Dimensions: Decency (polite, respectful, friendly) and Engagement (empathetic, supportive).

2. The Entertaining Archetype: Objective: To make interactions enjoyable and engaging. Personality Dimensions: Vibrancy (joyful, playful, humorous) and Engagement (interested, proactive).



4. Findings and Implications

We designed an empirical study within TKH Group with 28 participants interacting with the CA designs, the findings and implications from the study are insightful for future enterprise CA design 1. Social Elements in CA Design: Integrating social interactions is crucial for balancing approacha-

- bility and professionalism in enterprise CAs.
- 2. Engagement vs. Professionalism: The entertaining archetype enhanced engagement but struggled to meet professionalism standards, highlighting the need for balance.
- 3. Challenges with Subtle Traits: Subtle personality traits were difficult to convey effectively through large language models, impacting the CA's ability to engage users.
- 4. Leveraging Social Ties: Future CA designs should consider leveraging departmental and social ties to boost engagement quality.
- 5. Future Research Directions: Investigating CA personality acceptance across different user groups and refining the balance between engagement and professionalism are key areas for further study.

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3. The Direct and Transparent Archetype Objective: To ensure efficiency, clarity, and professionalism. Personality Dimensions: Serviceable (efficient, functional, organized).

Direct Functional

