

What Does Success Look Like? Catalyzing Meeting Intentionality with AI-Assisted Prospective Reflection

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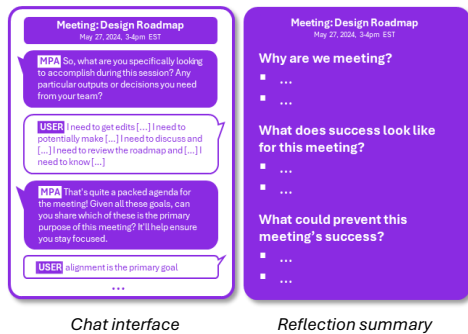
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A Technology probe: AI-driven Meeting Purpose Assistant



B Study protocol

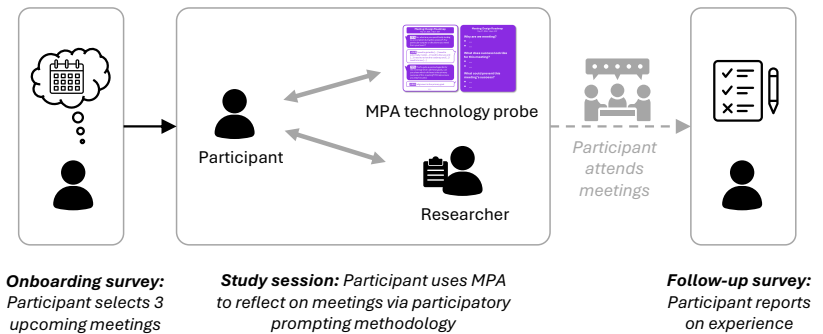


Figure 1: Overview of this paper’s exploration of how a generative AI Meeting Purpose Assistant (MPA) can support prospective meeting reflection. (a) The MPA technology probe included a chat interface where participants engaged with the AI (left) and a reflection summary pane (right) that included a summary of the conversation, triggered by participants’ button-click. The summary included concise bullet points summarising key points from the conversation (not shown here), consistently organized under the three headings (shown here). (b) The study protocol included an onboarding survey where the participant provided details of three upcoming meetings; a study session in which the participant engaged with the MPA, moderated by a researcher via a participatory prompting methodology; and a follow-up survey in which the participant reported on their meetings after they occurred.

ABSTRACT

Despite decades of HCI and Meeting Science research, complaints about ineffective meetings are still pervasive. We argue that meeting technologies lack support for prospective reflection, that is, thinking about why a meeting is needed and what might happen. To explore this, we designed a Meeting Purpose Assistant (MPA) technology probe to coach users to articulate their meeting’s purpose

and challenges, and act accordingly. The MPA used Generative AI to support personalized and actionable prospective reflection across the diversity of meeting contexts. Using a participatory prompting methodology, 18 employees of a global technology company reflected with the MPA on upcoming meetings. Observed impacts were: clarifying meeting purposes, challenges, and success conditions; changing perspectives and flexibility; improving preparation and communication; and proposing changed plans. We also identify perceived social, temporal, and technological barriers to using the MPA. We present system and workflow design considerations for developing AI-assisted reflection support for meetings.

^{*}Both authors contributed equally to this research.

[†]The work was done when the co-author was employed at Microsoft.

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CHIWORK ’25, June 23–25, 2025, Amsterdam, Netherlands

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ACM ISBN 979-8-4007-1384-2/25/06.

<https://doi.org/10.1145/3729176.3729204>

CCS CONCEPTS

• Human-centered computing → Empirical studies in HCI.

KEYWORDS

videoconferencing, meetings, goals, purpose, intentionality, workplace, prospective reflection, generative AI, participatory prompting

ACM Reference Format:

Ava Elizabeth Scott, Lev Tankelevitch, Payod Panda, Rishi Vanukuru, Xinyue Chen, and Sean Rintel. 2025. What Does Success Look Like? Catalyzing Meeting Intentionality with AI-Assisted Prospective Reflection. In *CHIWORK '25: Proceedings of the 4th Annual Symposium on Human-Computer Interaction for Work (CHIWORK '25), June 23–25, 2025, Amsterdam, Netherlands*. ACM, New York, NY, USA, 33 pages. <https://doi.org/10.1145/3729176.3729204>

1 INTRODUCTION

Meetings are a key site for a diverse set of formal and informal activities in modern work [159], with remote and hybrid meeting technologies also being key enablers of larger and more distributed organizations [102]. Yet, despite their ubiquity, and decades of Meeting Science and Human-Computer Interaction (HCI) research, meetings are frequently complained about as a source of inefficiency and fatigue [50, 95, 122, 125, 126, 155]. Current meeting scheduling and videoconferencing technologies focus on optimizing the functional coordination of meetings or the actual collaboration in meetings (the ‘how’ of meetings; e.g., [97, 105, 152]). However, many of the complaints about inefficiencies and fatigue cited above are exacerbated by uncertainty about the purpose and relevance of meetings, which cascades to later problems in moderation, time management, and evaluation [46]. Meetings, like many organizational collaboration choices, arise largely from a mix of corporate culture, tradition, and ad hoc decisions about what is to hand or apparently easiest [112, 125, 139]. This speaks to a lack of *meeting intentionality* (the ‘why’ of meetings; e.g., [126, 155]), which is itself exacerbated by the lack of meeting technologies to support it [139]. This paper addresses this missing foundational element, exploring what we could add to our meeting technologies to promote intentionality.

Intentionality requires *reflection*, which can be broadly defined as consciously re-evaluating thoughts, ideas and experience(s) for the purpose of guiding future behavior [15, 23, 24, 138]. Reflection can be guided, encouraging people to articulate the particular needs of their situation [17, 86], and this can have beneficial effects. Most HCI research on reflection has focused on scenarios in personal life [17], but some research has explored the benefits of individual and team reflection in the workplace (e.g., around productivity [94], work-life balance [165], work attitudes [77], and chat-based collaboration [107]). Technological support for reflection on meetings has focused on improving inclusivity and engagement-related behaviors using real-time notifications during meetings [12] or post-meeting dashboards [132]. However, to address complaints about the relevance of meetings, we take the position that meeting technologies need to support reflection *before the meeting*, at the invitation or preparation stages, when goals and associated obstacles can be surfaced, clarified, and anticipated in time for planning and action [139].

The key challenge in designing technology for meeting reflection (and in Computer-Supported Collaborative Work more generally [1]) is that for reflection to be effective, it should be *personally and contextually meaningful* across the enormous diversity of meeting types, roles, teams, and outcomes [10, 139]. Prior workplace

interventions for reflection relied on static, pre-defined questions, lacking personalization and context integration, which limited their ability to enable effective reflection [77, 94, 165, 168]. A second challenge is that even when reflection is recognized as valuable, it has a significant time cost [53, 94, 118, 168], and thus reflection features must lead to tangible and valuable outcomes that can be incorporated into busy workflows.

Generative AI (GenAI) is a promising technology for enabling personalized and actionable reflection due to its natural language fluency, flexibility, and ability to integrate relevant context [29]. Recent work demonstrates its potential for enabling conversational interactions or other experiences that provoke and guide reflective and critical thinking, for example by probing users about their perspective and constructively pushing back against their responses [30, 35, 108]. Moreover, its ability to synthesize and transform text enables the translation of reflection into a range of work resources (e.g., agendas, pre-reads, emails, chats) that can support customized planning and running of meetings [106], thereby making reflection directly *actionable*, instead of solely a thinking exercise.

To explore the implications of AI-assisted reflection for meeting intentionality, we built a technology probe [33, 68]—the Meeting Purpose Assistant (MPA)—that engaged participants in brief conversations to stimulate reflection on their meetings. Our study focused on *prospective* reflection (i.e., on the purposes and challenges of *upcoming* meetings) as a key lever for *catalyzing* intentionality and effective planning in the meeting lifecycle [139]. Of course, prior research has shown that not all meetings have the same level of need for *explicit* articulation of purpose, success, and challenges [139], especially when there is a strong social component. However, research also suggests that some workers are frustrated by opacity around, for example, the proportions of social to productivity-focused discussion, or the challenges of scheduling workplace socialization [19] (and see §6.3.1 for our discussion). As such, we start from the position that all meetings may benefit from some form of prospective reflection, with its extent and form to be explored.

Given the formative stage of this research, we developed the MPA as a technology probe to explore the range of responses to GenAI’s reflective capabilities in this context [33, 68], rather than a design to be validated against a static structured reflection tool. The MPA used a Conversational User Interface (CUI) to ask participants to articulate and clarify the purpose, success, and challenges for meetings of any type, integrating basic context about the upcoming meeting into its questions and seeking more detail if necessary. The generative capabilities of the MPA meant that it was able to address a diversity of meeting contexts and participant responses. To explore how participants might consider reflection as an actionable component of future workflows, at the end of a discussion about an upcoming meeting, the MPA summarized the conversation in a structured format for participants to keep as a record, and we asked them about the value of this Reflective Summary.

We recruited 18 employees of a global technology company to use the MPA in a *participatory prompting* study—where the researcher guides the user’s interaction with the GenAI system to clarify technical issues and elicit further reasoning [134]. In addition to capturing immediate experiences and impacts via this method, we also used a follow-up survey to capture any impacts on participants’ meetings after they occurred. Given the diversity

of meeting contexts, and the irreconcilable socio-technical gap navigated by HCI and CSCW [1], we anticipated an equally diverse and potentially conflicting set of responses to the probe. Indeed, we sought to uncover barriers to reflection as much as we aimed for positive impact. Our contributions cover:

- the process of reflective interaction between the GenAI technology probe and the participants, including the handling of diverse contexts and responses;
- the diversity of impacts of reflection, including clarification and prioritization of meeting goals and challenges; changes in perspective and flexibility; improved preparation and communication; and proposed changes in meeting plans;
- technical and socio-psychological barriers to AI-assisted reflection, and considerations of the optimal timing of reflection in workflows;
- design implications, focusing on system and workflow design considerations for catalyzing meeting intentionality via natural language AI-assisted reflection.

Our findings may inform the design of features for reflection across the meeting lifecycle, and potentially other areas of workplace intentionality [139].

2 PRIOR WORK

2.1 Understanding and Designing for Meetings

Previous research efforts span the entire meeting lifecycle. While scheduling tools [28, 42, 149] and online calendar systems [20, 104, 111] target the problem of time coordination, research into meeting participation [22, 25, 31, 57], moderation [90, 96, 98, 137], co-presence [21, 105, 117, 145, 152], and camera-use [32, 61, 123, 143, 172] explores experiences of users *during* meetings. Post-meeting activities include consuming meeting recordings [71, 72, 87, 160] and AI-generated summaries [82, 154]. While this previous research focuses on the coordination, medium, and recall of meetings, our research is better situated within a smaller literature focused on *why* people have meetings—a question partly rooted in a view of meetings as ‘articulation work’ used to coordinate and integrate distributed tasks and workers [41, 136, 148, 162].

Research has explored various taxonomies of meeting purpose [9, 116, 129, 144, 146, 147] (see [139] for a review). However, that no taxonomy has become standard in research or industry speaks to the problem of encompassing the idiosyncrasies of meetings and people’s perceptions thereof. Scott et al. [139] take an alternative approach, investigating knowledge workers’ understandings of the relationship between meetings and meeting goals. Some meetings are seen as a means to an end: the meeting should progress against a goal. Other meetings are seen as an end in themselves: the goal *is* to meet. Meeting purpose often remains implicit because meetings are easy to schedule and fundamentally conversational [19]. This has allowed them to become essential organizational routines [52, 112], which brings its own challenges.

In the field of routine dynamics, meetings are seen as requiring both ‘mindless’ and ‘mindful’ activities, with people simultaneously drawing on ‘mindless’ habits and ‘mindful’ considerations of the current context [67, 112]. For example, meeting participants can attend a recurring meeting series with an established, ‘mindless’ set of expectations, while also ‘mindfully’ dealing with novel issues [139].

Balancing mindfulness and mindlessness is mediated by *metacognition*: people’s ability to monitor and control their own thinking [3, 81]. While metacognition is crucial for planning, decision-making, and the allocation of mental effort, it can also be cognitively demanding [2, 92, 153]. A powerful way to support metacognition, and thereby *change* habits and routines, is to provide opportunities for explicit *reflection* [48, 59, 86].

2.2 Reflection to Catalyze Intentionality and Change Routines

There are several working definitions of reflection [15, 23, 24, 138], referring to the conscious process of re-evaluating thoughts, ideas and experience(s) for the purpose of guiding future behaviour [24].

Reflection is thought to occur in stages [13, 54] involving *noticing* (building awareness without analysis), *understanding* (analysing from different perspectives and through questioning), and *future action* (changes in perspective or intentions) [78]. Schön [138] distinguishes between ‘reflection-in-action’ (during a task) and ‘reflection-on-action’ (after task completion). Relatedly, we distinguish between reflection that is *prospective* (focusing on future actions, e.g., forming intentions and predicting one’s ability to fulfill them) or *retrospective* (focusing on past actions, e.g., evaluating goal achievement) [55, 66].

Thinking about the future involves forming intentions, and developing a course of action, or a plan, to achieve these desired end-states [7, 14]. As the future can be unpredictable, prospective reflection involves considering uncertainties and contingencies [15], and making alternative plans to achieve intentions in different scenarios. For example, the ‘premortem’ managerial strategy asks teams to imagine that their project has failed, propose potential causes for this failure, and make mitigation plans [75, 161]. Premortems have been shown to improve collaborative outcomes [89, 130]. Parke et al. [109] showed that those who engaged in contingency planning (i.e., thinking about potential interruptions and task switching) maintained motivation and performance in the face of interruptions, whereas those who engaged in time management planning (i.e., listing and prioritizing tasks, and allocating time to each task) fared worse when confronted with interruptions. This suggests that contingency planning can support self-regulation in daily work, allowing more realistic goal-setting, and re-adjustment after interruption. Our approach is motivated by these ideas, as well as related work on reflection in HCI.

2.3 Designing for Reflection and Intentionality

HCI research has explored self-reflection to facilitate goal setting and intentionality more broadly [5, 15–17, 99]. Bentvelzen et al. [17] discuss resources for designing for reflection, including temporal considerations, conversational interaction, and ‘discovery’ approaches like reframing and provocation. Most research has targeted personal and non-work settings (e.g., personal wellbeing) [17, 99]. Few empirical studies have focused on reflection in the workplace [53], fewer on rapid ‘reflection-in-action’ [53, 138], and fewer still have focused on meetings, whose collaborative nature adds complexity to the reflection process. Samrose et al. [132] used an interactive dashboard to support retrospective reflection on

in-meeting behaviors pertaining to meeting effectiveness and inclusiveness, and Aseniero et al. [12] used a dashboard to enable real-time engagement with, and reflection on, meeting content. Park and Kulkarni [107] developed a structured, collaborative interface for identifying effective team practices in a semi-synchronous chat setting. As far as we are aware, no study has examined reflection on meeting *goals, success conditions, and challenges*.

Outside of the meeting context, Meyer et al. [94] explored how daily reflective goal-setting via surveys could improve software developer productivity, with 80% of participants perceiving a positive behavioral change. Kocielnik et al. [78] designed a conversational agent to support daily retrospective workplace reflection on goals and other aspects, which increased awareness, changes in perspective, and support for management and performance, though not all reflection questions were found to be meaningful. Williams et al. [165] designed a goal-oriented conversational agent to support work ‘detachment’ and ‘reattachment’ across days, which reduced the sending of work emails after-hours, and increased next-day self-reported productivity and engagement. Reicherts et al. [119] used a conversational agent to probe users during financial decision-making, focusing on eliciting participants’ motivations, reasoning, and confidence around their decisions. Wolfbauer et al. [168] designed and tested a conversational agent that can support reflection competence for lifelong learning among apprentices.

These studies underscore the value of reflection for eliciting and clarifying goals and related challenges in the workplace. However, they all use structured questions or minimally adaptive conversational agents, and most suggest that there is an unfilled need for personalizing reflective interactions by integrating relevant context and adapting reflection prompts accordingly [77, 94, 119, 165, 168]. Overall, this reaffirms that effective reflection benefits from personalized guidance to enable elements like perspective-taking, probing, and testing assumptions [53, 114, 118, 168]. Such personalization does not necessarily require going so far as learning about the user and making recommendations (although it could in the future). As long as the system adapts its responses to the users’ specific inputs and with respect to the context it has about a specific meeting, the experience will be unique for the user, and thus be more meaningful than generic systems. Finally, despite the benefits of reflection, studies also highlight its time cost as a barrier to adoption [53, 77, 94, 118], unless it can be integrated into workflows.

Thus, reflection on goals for upcoming meetings is a promising yet unexplored approach to enabling meeting intentionality and could be further augmented by greater data-driven context, personalization, and mitigation of the time cost of reflection—aspects that can be potentially facilitated by GenAI.

2.4 Generative AI as a Flexible Technology for Reflection

GenAI excels in its capability of integrating relevant context, flexibly adapting to inputs, and generating fluent natural language [29]. Grounded in these capabilities, recent research has framed GenAI as a potential ‘tool for thought’ [40, 65, 153, 171], where systems act as a ‘provocateur’ [133], or an ‘antagonistic AI’ [30]. Tankelevitch et al. [153] suggest that, although GenAI systems can impose metacognitive demands on users, they also have the potential to support

users’ metacognition, e.g., by using self-evaluation to help users reflect on their task goals. Empirical work has begun to explore these ideas, for example via reflective question-asking to support decision-making or design ideation [62, 108, 170]. Chopra and Haaland [36] showed how qualitative interviews can be conducted with a GenAI system which probes users for clarifications and deeper explanations. In a collaborative context, Chiang et al. [35] show that a ‘devil’s advocate’ LLM that raises questions promotes appropriate reliance in group decision-making. CoExplorer [106] explores how GenAI can support intentional meetings by generating a meeting agenda from a meeting invitation, integrating attendee input to focus discussion, and guiding attendees through meaningful meeting phases.

These studies demonstrate GenAI’s ability to enable dynamic and meaningful interactions that support thinking across many domains. This paper contributes to these explorations, weaving together the earlier research on reflection with the new capabilities of GenAI.

3 RESEARCH QUESTIONS

Grounded in prior work, we explore the value of prospective self-reflection in a novel yet high-impact context: eliciting and clarifying meeting goals and related challenges, and thereby promoting intentionality in workplace meetings. We address the limitations of prior work on reflection by using GenAI to integrate relevant context, personalize reflective interactions, and make reflection actionable within workflows through relevant summarization of interactions. Our specific research questions were:

- (1) What could a process of GenAI-assisted prospective reflection on meeting goals and challenges look like: how do people respond and how could AI adapt to their responses?
- (2) What are the potential impacts of GenAI-assisted prospective reflection on people, meetings, and collaborative workflows?
- (3) What are the design implications for GenAI systems that aim to enable and encourage prospective reflection for meetings?

4 METHODS

As the first inquiry into prospective reflection on meeting goals with GenAI, we took an exploratory, qualitative approach [4, 128], allowing us to identify insights for further research and design. We followed a participatory prompting methodology [49, 134], where participants and researchers reflect together through co-engagement with an AI system treated as a technology probe [68]. This methodology grounds research in the capabilities of existing AI, while the researcher mediates confusions and challenges, allowing the participant to focus on the task of interest. We chose to create a design probe to structure open questions and reflections with participants, embracing non-deterministic research goals and outcomes [33]. We recruited 18 participants to use the technology probe to reflect on three of their real, upcoming meetings; the MPA was provided details of these meetings ahead of the interaction. We also used a follow-up survey to capture any self-reported impacts on participants’ meetings after they took place, and any further responses to the probe.

4.1 Technology Probe: The Meeting Purpose Assistant

The key design goals of the Meeting Purpose Assistant (MPA) were to (a) support meaningful prospective reflection on upcoming meetings, and (b) make this reflection actionable.

Reflection is often facilitated through conversation, with open-ended questions allowing the exploration of alternative perspectives [5, 79, 120, 121]. Drawing upon Chopra and Haaland [36]’s work, we used a simple Conversational User Interface (CUI), much like that of ChatGPT and other GenAI general purpose systems that participants might have used before, which could probe users with flexible questioning (left pane in Figure 2).

With access to the basic details of the meeting, the MPA asked the participants to articulate their sense of the meeting’s purpose and success conditions. This is an example of prospective goal encoding: mentally looking ahead to determine how to proceed [11]. By asking the participants to consider their challenges and uncertainties [15] in the meeting, we hoped the MPA would stimulate explicit metacognition [3, 153], and emulate a meeting ‘pre-mortem’ [75, 161].

Channeling this detailed and unstructured reflection into actionable output requires capturing the meaningful aspects of the conversation, and articulating them for a work context. To achieve this, we integrated a summarization feature, which distilled conversations into a consistent format (right pane in Figure 2). This consistent structure could be parsed more quickly by participants when repeatedly using the MPA, as well as representing a common artifact which could be compared between participants.

4.1.1 Technical details. The MPA was a Node.js web application which queried GPT-4 Turbo via OpenAI’s Assistants API (see Figure 3 for a system diagram).

The MPA required three assistants, each duplicated for each meeting of each participant. Meeting details were collected via the onboarding survey (see subsection 4.3.1), and uploaded to the relevant assistant ahead of the participatory prompting session. The first assistant extracted the meeting title from the uploaded details. A second assistant used the uploaded details to provide basic context for reflective conversation with the participant, guided by meta-prompts. We varied the meta-prompts slightly for organizers and attendees, focusing more on the meeting’s overall purpose for organizers, and more on their individual purpose for attendees. A third assistant (with no direct access to the uploaded details) summarized the conversation between the MPA and the participant, without providing its own solutions. Details of all meta-prompts are in Appendix E.

For data privacy, our web application was self-hosted on a Windows machine behind an enterprise firewall, where the data from the sessions was logged as well. Only research team members connected to the enterprise network had access to this machine and user data. Additionally, the meeting data from the participants was anonymized before being uploaded to OpenAI servers.

4.2 Participants

Following ethics authorization¹, we recruited a purposive sample [51] of 19 participants from six different work areas within a global technology company. The sample included prior research participants who had indicated interest in future studies, and four volunteers from adjacent research groups (P7, P10, P15, P16). P15 was excluded due to a misinterpretation of the study brief. The final sample (10 women, 8 men) varied in age, location, work area, seniority, and managerial status (see Appendix A for details). Participants consented before their sessions and offered a \$30 gift voucher for their participation.

4.3 Protocol

The protocol (Appendix C) had three parts: An onboarding survey which sampled upcoming meetings, a participatory prompting session with the MPA technology probe, and a follow-up survey after participants’ meetings had taken place.

4.3.1 Onboarding Survey and Sample Meeting Details. Participant onboarding involved taking a short survey on demographics and meeting practices, and then providing details for three sample meetings to be used in the participatory prompting session. Full details of the survey can be found in Appendix C.1. The three meetings requested were: (a) a familiar meeting they were organizing, (b) an unfamiliar meeting they were organizing, and (c) a meeting they were attending and anticipated being ineffective². While the familiarity of a meeting will approximate the extent to which it is embedded in a routine and corresponding mindfulness, the participant’s role in the meeting will mediate the impacts of reflection, as organizers are generally considered to have more control and responsibility over a meeting than attendees [139]. Participants were asked to find a meeting they anticipated being ineffective because these are prime candidates for improvement. For each meeting, participants provided title, date and time, description, number and type of attendees, and whether it was a one-off or a recurring meeting. These meeting details were uploaded to the MPA. A table of all sample meetings is in Appendix B.

4.3.2 Participatory Prompting Session. Participants attended a video meeting with the first author, averaging 60 minutes. After brief introductions, the participants used the MPA to reflect on the upcoming meetings while sharing their screen. This involved three sets of 10 minutes of conversation with the MPA *and* researcher, followed by 5 minutes discussion with the researcher about the Reflection Summary. For each meeting, the participants initiated the conversation, and MPA would then invite the participant to reflect on the meeting’s purpose and potential challenges. Any remaining time after MPA engagements were complete was used to ask about the overall experience. Details of the session format are in Appendix C.2.

¹Ethics authorization was provided by Microsoft Research’s Institutional Review Board (IORG0008066, IRB00009672).

²P6 could not find a meeting she was organizing that week, so she reflected on three meetings she was attending. P17 submitted a meeting she attended in the past, so this was not discussed during the session.

Meeting title: Leading Leaders FY24

encourage or motivate all attendees to engage more deeply with creating and sharing their walking decks?
Could there be a way to make this task feel more crucial or beneficial for their development?

17:48:01 User

I could mention that it is a strong signal as to their commitment to achieving their goal.

17:48:04 Assistant

That sounds like a good strategy to underline the importance of the task. Highlighting how it reflects on their commitment could indeed drive motivation. Do you think there might be any specific challenges you'll face in conveying this message effectively to ensure it resonates with everyone?

17:49:45 User

Might be perceived as condescending or implying they don't care enough, when they truly were too busy with other things.

Enter your message

Send

Summarize

Summary took 0m 14s

Managerial Mentoring Session**Why are we meeting?**

You are conducting a mentoring session for aspiring people managers focused on practical leadership skills and personal development. The session aims to enrich the managerial capabilities of the attendees through discussions led by either the mentees themselves or structured around prepared materials like videos and the day plan template.

What does success look like for this meeting?

- Engaged discussion on leadership and management topics.
- Mentees create and share their own walking decks
- Recommend videos and books to supplement learning and spark dialogue.

What could prevent this meeting's success?

- Mentees not preparing discussion topics or walking decks.
- Possible perception of your encouragement as condescending or pressuring.
- Time constraints of mentees hindering participation.

Figure 2: The Meeting Purpose Assistant technology probe consisted of a chat interface (left), powered by GPT-4 Turbo, that participants interacted with, and a Reflection Summary (right) of their conversation that participants could obtain by clicking the ‘summarize’ button. The MPA had basic context about the meeting from information uploaded in advance by the researcher.

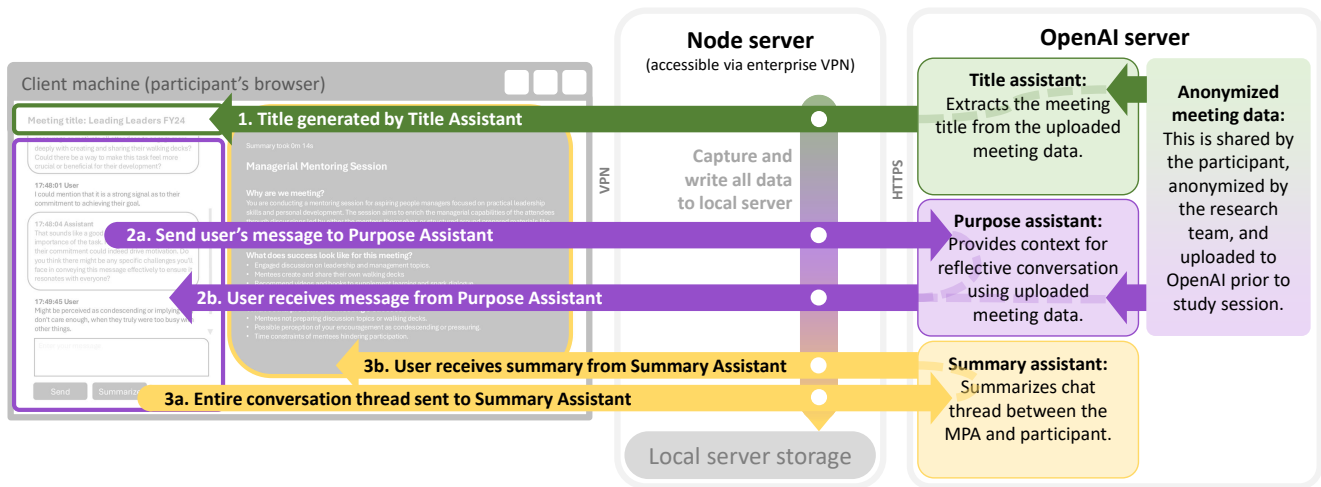


Figure 3: System diagram for the Meeting Purpose Assistant. The client machine (left) interacted with the assistants on OpenAI server (right) through our node.js server (center) behind an enterprise firewall. The figure shows how the components that make up the interface in Figure 2 (greyed out here for clarity) interact with the three Assistants. All data was stored locally on our server, accessible only to the research team.

We used a researcher-as-guide format [134], in which a semi-structured engagement protocol was used to encourage the participants to interact with the MPA whilst thinking aloud, and discussing their thought processes with the researcher. This allowed

the researcher to respond to technical confusions and challenges, elicit participants' reasoning, and reveal the gaps between the user

and the technology’s assumptions and success criteria. As a result, the researcher could build a better understanding of the individual meeting, whilst surfacing a wider range of topics than the MPA alone. This approach was used to identify opportunities for future intervention design.

If asked, the researcher also supported participants in interpreting the MPA’s output, and deciding on an appropriate response. For example, several participants asked how honest they could be with the MPA, or that they would prefer the MPA to give a suggestion. In these cases, the researcher encouraged them to be as honest as they liked, and that they could ask directly for suggestions.

4.3.3 Follow-up Survey. Participants were sent a follow-up survey after their upcoming meetings had occurred. It asked participants whether the interaction with the MPA influenced their expectations for each meeting, and how effective the meeting was. Since the participants did not use the MPA as a product or feature, this was more a loose test of whether engagement with GenAI-driven self-reflection had an effect that outlasted the specific session. Details of the follow-up survey are in Appendix C.3.

4.4 Analysis

Interviews were transcribed by the video meeting service, and cleaned by the first author, who also inserted the MPA chat into the transcript. Two authors then conducted an initial thematic analysis [26] on six of the transcripts. This involved re-watching the interview recordings, reading the transcripts, and making comments to indicate potential codes and themes of interest. This resulted in broad themes of interest, such as ‘Impacts of Reflection’ and ‘Opportune Moments for Reflection’. The first author coded all 18 interviews using MAXQDA³ to conduct reflexive thematic analysis [26, 27], which was descriptive, semantic (surface-level meaning), experiential (capturing people’s own understanding and experiences), and essentialist (capturing reality as expressed with the data). Using MAXQDA’s creative coding feature, these low-level codes were categorized into collective categories. For example, if a participant articulated *when* they would like to use a tool like the MPA, we would code this statement as “Important meetings as candidates for reflection”. This was aggregated into a higher-level code such as “Opportune Moments Relative to the Individual and their Role in the Meeting”, which falls beneath the theme of interest “Opportune Moments for Reflection”. Separately, verbatim responses from the follow-up survey were consulted to check whether the impacts and evaluations identified in the transcript were maintained or realized after the meeting had been conducted.

5 FINDINGS

Our findings, grounded in the analysis of both the participatory prompting session and follow-up survey, describe how participants respond to GenAI-assisted reflection and how the probe handles their diverse meeting contexts and reflections. Our findings are presented in four sections, summarized in Table 1. Given GenAI’s non-determinism [135], we considered the probe’s responses as important as participants’ in understanding the interaction.

We first describe the overall *Process of Reflective Interaction*, presenting the variety of questions and responses involved in the participatory prompting session. We then describe the *Impacts of Reflection*, first on participants’ thinking, and then on the actions they could (and often did) take to change the meeting. Following this, we describe *Barriers to Effective Reflection* with an AI system. Finally, we explore the *Timing of Reflection*: opportune moments to reflect, in terms of objective and subjective timing.

5.1 Process of Reflective Interaction

We first describe the course of participants’ reflections with the MPA, showing how the system adapted to their different contexts, and how participants responded to and used the Reflection Summary.

5.1.1 Initial MPA Questions and Participant Responses. The study and the MPA were designed to ask participants specifically about a meeting’s purpose and potential challenges, rather than prompt entirely open-ended reflection (see Appendix D for full examples referenced below). In some cases, the MPA embedded information from the meeting description into its first message, such as the meeting title, date, and attendees. This was either in a quick paraphrase of the meeting information (P16, P19), or integrated into its first question about meeting purpose (P5, P6). At other times, it asked more generic questions about what the participant wanted to achieve in the meeting (P1, P19).

There was extensive variety in participants’ responses to these initial questions about goals (Table 2, *top*) and challenges (Table 2, *bottom*). For some meetings, participants could not initially express any purpose or challenge (P1, P6), or gave a non-specific responses (P10, P18). Initial vague challenges included ‘ambiguity’ (P9) or ‘unknowns’ (P5). For other meetings, participants could list extensive goals (P19, P16) and challenges (P17, P16), or describe them precisely (P5, P2). This diversity in responses demonstrates participants’ pre-existing dispositions for reflection, to which the assistant had to adapt. The meta-prompt (available in Appendix E) directed the MPA to encourage further reflection.

5.1.2 Personalizing Reflection. In the case of minimal responses, the MPA probed for more specific answers by asking follow-up questions about the individual’s role in the meeting (P13), or what they specifically want to get out of the meeting (P1, P10). If the participant did not think the meeting had a specific purpose, the MPA asked whether the participant saw any *value* in the meeting (P18). When a participant could articulate a purpose, the MPA followed up with personalized questions to elicit further detail, integrating participants’ specific terminology and concepts.

“Can you elaborate on why understanding the creation of the MACC number is important for this meeting?”

(MPA to P5 - Customer Support)

If a participant perceived no challenges, sometimes the MPA insisted by paraphrasing.

“Since it’s all running smoothly, do you think there’s any room for even minor improvements, or anything you might want to keep an eye on just to ensure it stays that way?” (MPA to P6 - Customer Support)

³<https://www.maxqda.com/>

Table 1: Summary of Findings

Process of Reflective Interaction	Impact of Reflection: Change in Thinking	Impact of Reflection: Changing the Meeting	Barriers to Reflection	Timing of Reflection
→ Initial MPA Questions & Participant Responses → Personalizing Reflection → Actionable Reflection: Reflection Summaries	→ Making Purpose Explicit → Prioritization → Reflecting on Unknown Variables → Therapy & Coaching → Changing Perspectives & Flexibility → Encouraging Preparation	→ Promoting Engagement → Promoting Accountability → Meeting Efficiency & Effectiveness → Changing a Meeting Series	→ Resistance to Specifics → Recurring Meetings as Containers → Technical & Specific Context → Confidentiality → Input Modality: Text vs. Speech → Resistance to Elicit Social Goals → Desiring & Implementing Solutions → Conflating Wider Goals with Meeting Goals	→ Objective Timing → Subjective Timing → Meeting Importance → Meeting Uncertainty

Table 2: Initial questions about meeting purpose and subsequent questions about challenges asked by the MPA, and corresponding responses from the participant

Focus	Participant	MPA Question	Participant Response
Purpose	P1 - Marketing	<i>"Let's dive into the purpose of the upcoming meeting. Do you know what you're hoping to achieve in this session?"</i>	<i>"I'm not really sure as someone else is leading this meeting."</i>
	P5 - Customer Support	<i>"I see we're about to dive into the [Customer Name] MACC Sync meeting. What are you hoping to achieve or resolve by the end of this session?"</i>	<i>"I'm looking to understand how the MACC number was created when it was sold, the current outlook for consumption, and the plan to achieve the number."</i>
	P6 - Customer Support	<i>"Since this is a regular session, what makes this particular instance of the meeting important? Are there any specific topics or updates that are more critical this time around?"</i>	<i>"no specific topics - based on the updates"</i>
Challenges	P16 - Research	<i>... "After gathering this info, what do you feel would be the main challenges in aligning your presentation to both satisfy the PSP committee and engage your other colleagues effectively?"</i>	<i>"Possible challenges: Knowing how technical to make the presentation. Making sure the presentation is completely aligned with my coauthors' expectations. Reaching a firm consensus from the committee."</i>
	P9 - Sales	<i>"Considering everyone's busy schedules and the lack of a second chance for a dry run, what do you see as the main challenges in ensuring everything is timed and coordinated effectively in this single session?"</i>	<i>"Ambiguity. Unsure if each of the presenters are aligned with no opportunity to obtain this information in advance."</i>
	P2 - Technical & Facilities	<i>"Identifying Meeting Challenges Let's tackle that. Could you share what specific problem you're encountering with these meetings?"</i>	<i>"Poor attendance."</i>

When probing for greater detail on the challenges, the MPA often asked about how this challenge would impact the meeting (P1, P5), or the participant's plan to tackle the challenge (P9, P5).

"How do you plan to tackle this ambiguity during the meeting to ensure each presenter is on the same page and everything runs smoothly?" (MPA to P9 - Sales)

When participants listed multiple goals or challenges, the MPA occasionally asked participants to prioritize between them (P19, P4), or proposed a focus (P13, P16).

"Given all these goals, can you share which of these is the primary purpose of this meeting? It'll help ensure you stay focused." (MPA to P19 - Product Development)

5.1.3 Making Reflection Actionable: MPA Reflection Summaries. When ready, the participant asked the MPA to generate a Reflection Summary, which distilled the conversation into bullet points about the meeting's purpose, success criteria, and potential challenges (right pane in Figure 2).

Several participants said they would copy and paste the meeting summary into their meeting descriptions (P10, P12, P14, P19) or an associated chat thread (P12), or share their goals as they start the meeting (P1, P11, P12). For some, then, the ability of GenAI to summarize meeting reflection led to the creation of a useful artifact. A subset of these participants reported in follow-up surveys that they had in fact used the Reflection Summary (see §5.3). Thus, we observed that this simple AI-generated summary could help make reflection more actionable by enabling its use in collaborative workflows.

That being said, other participants felt that while the Reflection Summary captured meeting purposes and challenges accurately, it did not include suggestions or solutions, even if these had been discussed with the MPA. Participants' desire for quick solutions is described further in §5.4.

5.2 Impact of Reflection: Change in Thinking

Interacting with the MPA led the participants to reconsider their upcoming meetings, often resulting in new clarity and perspectives. We describe how interacting with the MPA changed participants' thinking about a meeting via (a) making the purpose explicit, (b) prioritization, (c) reflecting on unknowns, (d) therapeutic associations, (e) taking others' perspectives, and (f) encouraging preparatory actions. These diverse experiences demonstrate how an adaptive AI system can promote meaningful reflection in many different ways.

5.2.1 Making Purpose Explicit. Multiple participants (P1, P11, P14, P17) said the MPA helped them translate implicit goals into explicit goals, thereby making them more *"tangible"* (P11). Benefits of this included clarifying understanding (P19), consolidating focus (P1), acting as a 'warm-up' for the meeting (P9, P1), speeding up response times in the meeting (P12), providing a 'game plan' (P9), and avoiding complacency as an attendee (P1). In this way, articulating the known goals or challenges of the meeting could help a user show up for the meeting in the right mindset. This was reiterated by participants in the follow-up survey (P1, P6, P9, P11, P19):

"Actually forcing myself to articulate it in and of itself is helpful." (P11 - Technical & Facilities)

"It helped me be prepared for the session with clear outcomes to drive towards." (P19 - Product Development, Follow-up Survey)

5.2.2 Prioritization. The MPA encouraged users to prioritize and create focused sets of goals or challenges (P4, P5, P16, P19). When a participant presented a list, the MPA asked them to prioritise among the items (P4). For a recurring meeting series, the MPA asked P5 and P16 *how* they usually prioritize the discussion topics.

"Given the 30-minute time slot, which one of these topics would you prioritize to ensure it's adequately covered?" (MPA to P4 - Sales)

TYPES: I would prioritize understanding if [Name] is someone I would want to work for. (P4 - Sales, to MPA)

"Now it's asking me what's the top priority - this is... a good coaching strategy." (P4 - Sales, to Researcher)

However, questions about prioritization do not always lead to specific, operationalized goals. P19 provided a list of multiple goals for a meeting—when the MPA asked her for the *primary* purpose, she replied that *"alignment is the primary goal"*.

5.2.3 Reflecting on Unknown Variables. The MPA helped participants identify missing pieces of information and confront their implications for the meeting (P1, P7, P14, P19). However, different participants had different levels of appetite for anticipating alternative scenarios dependent on this information. Even without a clear budget, P1 still felt a meeting would be useful to anticipate *"all [the] possible permutations"* so they would be ready to *"get moving in one direction"* when information did arrive. In the follow-up survey, P1 and P19 confirmed the value of considering alternatives with the MPA.

"[The MPA] helped me set expectations to have a productive meeting, or to pivot to Plan B. We ended up pivoting to Plan B and had a productive meeting regardless." (P19 - Product Development, Follow-up Survey)

P7 was more resistant to reflecting on unknown problems with the MPA, having felt that he and his team had spent *"too much time planning"* to reduce risks without knowing *"which ones are the real risks"*. Without access to these previous deliberations, the MPA was unlikely to find a *"back up plan"* that not yet been identified.

"That's a thoughtful consideration... Do you have a process in place to negotiate changes or provide feedback to ensure alignment with your parameters?" (MPA to P7 - Research)

"TYPES: There's probably no plan, because we don't know what issues we might run into." (P7 - Research, to MPA)

In the follow-up survey, P14 said that *"thinking about the meeting in advance helped [her] to prepare for different outcomes"*, but during the interview she noted that thinking about long-term planning came at the cost of preparing for the meeting itself. These findings underpin the time cost of reflection, as considering unknowns and their future implications can broaden scope, and distract from ongoing, urgent work.

5.2.4 Therapy and Coaching. Several participants described that using the MPA felt like interacting with a therapist (P3, P10) or a coach (P3, P4, P17, P13). Rather than give them a solution, the system encouraged participants to think for themselves. P9 felt that her interaction with the MPA was effective in reducing her anxiety about a meeting, as it provided a *"sounding board to... think aloud... and validate a thing."* Finding herself *"overwhelmed in [her] own head narrative,"* she felt that the MPA could provide a *"pause with a thought forward."* In the follow-up survey, both P9 and P12 noted that the interaction reduced their feelings of stress.

"Any anxiety I had about the meeting evaporated." (P12 - Customer Support, Follow-up Survey)

However, other participants felt that the MPA was too polite and passive (P2, P5, P16), and wanted it to be more challenging.

“I think for the tool to be most useful, it needs to be a bit sort of pushy or something. If it’s just sort of responding and agreeing to what everything you say to it, then it doesn’t really do much.” (P16 - Research)

One way to test one’s internal narrative is to consider another perspective, as we discuss next.

5.2.5 Changing Perspectives and Flexibility. The MPA helped participants consider the perspectives of other meeting attendees. For example, the MPA asked P18 to consider how she would ensure a director would see value in sponsoring her career.

“How do you plan to ensure the executive sees the value in mentoring or sponsoring you after hearing about your experiences and aspirations?” (MPA to P18 - Customer Support)

“This [question] helped me to say, ‘OK, now look, for anyone to invest time or do anything for you, it’s always ‘what’s in it for me?’” (P18 - Customer Support, to Researcher)

In another example, interacting with the MPA led P16 to soften his hesitant approach to another team, eventually empathizing with their perspective, and seeing the benefits of collaborating.

“I think in fact even having this conversation, I’ve slightly recalibrated. I was seeing this as like, ‘Oh, what an annoying meeting that I have to do to persuade people to let me publish my paper’. But in the context of discussing it, and I actually realized that probably it is ultimately a good thing.” (P16 - Research)

Embracing other perspectives requires flexibility. The MPA had polarizing impacts on participants’ sense of flexibility. Some felt that GenAI-assisted reflection could make them more flexible, as it could reveal ways to change their meetings (P13, P14, P16, P19). However, others felt that reflecting on their purpose in advance could make them less flexible in certain meetings, as they would be predisposed to stick to their previously defined intent and outcomes (P4, P5, P11).

5.2.6 Encouraging Preparation. Reflecting with the MPA often reminded participants to take certain actions to prepare ahead of the meeting (P6, P13), such as sharing an agenda (P9, P19), checking the social media of unfamiliar attendees (P1, P11), or preparing a slide deck (P19). Some participants desired more help with these preparatory actions from the MPA itself (P2, P17, P11).

In the follow-up survey, several participants mentioned that they felt more prepared after the MPA interaction, which made the meeting more effective (P9, P12, P13, P19). However, meeting effectiveness is also dependent on other people’s preparation and intentions (P13, P11, P6, P17). Hence, to change the meeting, they would have needed to communicate and coordinate with others, as mentioned by some in the follow-up survey (P7, P11, P13, P17):

“It did not help, this was a meeting organized by someone else that I did not have control over.” (P17- Product Development, Follow-up Survey)

The next section describes how GenAI-assisted reflection may encourage users to take action to change the meeting, if they feel

comfortable with communicating about purposes and potential challenges with others.

5.3 Impact of Reflection: Changing the Meeting

While the previous section explored how GenAI-assisted reflection can influence an individual’s *thinking* about a meeting, this section describes how taking action to communicate this thinking with others can *change the meeting* itself. This was most often achieved by sharing the Reflection Summary, which promoted (a) engagement, (b) accountability, and (c) efficiency in other attendees, and by (d) reconsidering the format of a meeting series.

5.3.1 Promoting Engagement: Sharing Meeting Intentions. The reflective interaction with the MPA often encouraged participants to consider strategies to improve attendance and engagement (P2, P8, P19, P13), such as specifying a generic standing agenda (P14), indicating necessary asynchronous preparation (P16, P19), or asking people to confirm their attendance ahead of time (P2, P8).

“How will you ensure the right stakeholders are present and fully prepared for the discussion?” (MPA to P19 - Product Development)

“TYPES: Socializing the meeting content beforehand will be crucial. prereads will be necessary. maybe pre-meeting async feedback that can be reviewed in the meeting, so we spend time on discussion not explanation... i will put in some check-in meetings beforehand and send reminders/follow-ups.” (P19 - Product Development, to MPA)

However, this had to be balanced with other attendees’ desire to contribute to the direction of the meeting, particularly if they are clients (P9). In the follow-up survey, several participants confirmed that the interaction had led them to ask attendees to add to the agenda, and that this had improved attendance and engagement (P12, P16, P4). Further, as per §5.3, some participants reported that they had explicitly included the Reflection Summary in upcoming meeting communication.

“I sent [the summary] to the attendees, and they all brought topics of discussion, which made it very effective.” (P12 - Customer Support, Follow-up Survey)

Accordingly, participants felt that using the MPA could make them appear more prepared and confident in front of attendees (P1, P6, P11, P12, P14), particularly for meetings with important people (P12, P3).

“The recipient goes, ‘Oh, [P11] is not just doing this off the, fly by the seat of his pants, on this. It is a well thought-out, articulated meeting that will be valuable for me to participate in.” (P11 - Technical & Facilities)

Thus in two ways, even though using the MPA was not part of the official meeting workflow, GenAI-assisted reflection on the meeting was useful and actionable enough to encourage active change from participants, which had positive effects on others in meetings.

5.3.2 Promoting Accountability: Sharing Potential Meeting Challenges. An organizer could also use the MPA Reflection Summary to explicitly communicate potential meeting challenges, such as the risks of poor preparation or low attendance. To share these risks,

participants said they would need a trusting and honest relationship with the meeting attendees (P19, P9). Many emphasized that challenges would need to be worded *“tactfully”* (P12) and without *“finger pointing”* (P19). In the follow-up survey, P9 confirmed that being explicit about potential challenges improved accountability in the meeting.

P12, who had previously received negative feedback about her meetings, felt sharing risks could also improve her own accountability. When they received the MPA summary, she thought her teammates would think *“what meeting or training did she go to?”*

On the other hand, sharing potential challenges ahead of time carried its own risks according to participants. It could be seen as inappropriate, potentially offensive, or condescending: *“[treating] them like schoolchild”* (P2). For example, P7 was concerned that his collaborators could *“misunderstand... the brief”* for an upcoming meeting. Yet, if he shared this concern, he felt it could look like he did not trust them.

“You don’t want them to think that you think that they’re a risk.” (P7 - Research)

In another example, the MPA encouraged P12 to consider the risks of asking meeting attendees to improve their participation.

“Do you think there might be any specific challenges you’ll face in conveying this message effectively to ensure it resonates with everyone?” (MPA to P12 - Customer Support)

“TYPES: Might be perceived as condescending or implying they don’t care enough, when they truly were too busy with other things.” (P12 - Customer Support, to MPA)

Summarizing this conversation, as shown in Figure 2, the MPA Reflection Summary included two challenges: *“Mentees not preparing discussion topics or walking decks”* and *“Possible perception of your encouragement as condescending or pressuring”*. P12 said she would share *both* of these challenges with the attendees—firstly to motivate them to prepare questions and materials, and secondly, to demonstrate self-awareness as a coach. Thus, by highlighting the risk of communicating potential challenges, people could moderate the risk of causing offense.

Another perceived risk of sharing challenges was appearing less confident, particularly in front of external collaborators or customers. P2 feared sharing challenges would destroy the mystique of the service he provided.

“Have you seen the Wizard of Oz? Well, we are the man behind the curtain. We let them enjoy the sausage. We don’t tell them how we make it. That’s kind of part of our value and our mystery.” (P2 - Technical & Facilities)

5.3.3 Meeting Efficiency and Effectiveness. By communicating an explicit purpose ahead of the meeting, meeting organizer and attendees can ensure they are *“aligned”* (P9, P19) and *“on the same page”* (P1, P6, P14), prevent getting *“derailed”* (P19), and as a result, save time in the meeting (P5, P16). In the follow-up survey, several participants mentioned that their interaction with the MPA helped the meeting stay focused and on track (P1, P2, P9, P4).

“Really constructive. Turned what I expected to be an unimpactful meeting into one which had concrete outcomes and agreed deliverables.” (P1 - Marketing)

Participants also thought that reflecting with the MPA could eliminate unnecessary meetings (P5, P2), such as meetings about meetings (P19). If the meeting purpose is made clear by the organizer, attendees may be able to avoid irrelevant meetings (P5, P11, P16). For example, after reflecting on a meeting he initially thought was pointless, P16 concluded that *“the meeting itself is useful, but my presence in it is not”* (P16 - Research). However, canceling or deciding not to attend a meeting aren’t neutral decisions, as it could offend senior colleagues organizing the meetings (P16, P18).

In contrast, some meetings may be more effective if they had higher attendance and were longer. For example, P12 discussed with the MPA strategies to increase engagement and camaraderie in her weekly team meeting. This may increase the time spent in the meeting, but could better achieve the goal of team-building.

5.3.4 Changing a Meeting Series. Often, participants could not elicit specific goals for an instance of a recurring meeting, as described in §5.4.1. Instead, their reflective interaction involved considering the purpose and challenges of the meeting series as a whole, and making changes accordingly.

While recurring meetings were seen as largely effective at keeping everyone updated and fostering collaboration (P2, P7, P10, P16), they could also face general challenges, such as attendance (P2, P10), time-keeping (P7, P16), and engagement (P12). For example, P2 described attendance as a *“train wreck... I have to poll individual members separately, which is a huge waste of time”*. The MPA gave four suggestions of policies to improve attendance, and how to communicate them; in response, P2 said *“I think I’ll give it a try.”*

Regular updates from team-members often take longer than the time allotted. This meant that some items had to be delayed until the following week (P16), or follow-up meetings had to be arranged (P7). The MPA suggested that the organizers could ask attendees to submit their updates before the meeting (P16), or keep to a timed agenda (P7).

Sometimes, the MPA asked whether a particular instance differed from the meeting’s usual format (P9, P1). For P9, this highlighted that this meeting would be attended by the whole team for the first time. In the case of P1, this highlighted that the meeting was 15-minutes rather than the usual 30-minutes. Detecting changes from the usual routine of a recurring meeting could present opportune moments for reflecting on potential challenges that could result from this change.

5.4 Barriers to Effective Reflection with AI

The following section describes several potential barriers to specific and deep reflection with AI tools like the MPA. First, there were some contexts which prevented participants from providing specific details in their reflection. Second, some participants felt the goal-oriented focus of reflection undermined meetings’ relationship-building aspects. Furthermore, some participants suggested that they would be resistant to reflecting if it did not lead quickly to a solution. Finally, we observed that the MPA sometimes struggled to separate meeting goals from project goals.

5.4.1 Resistance to Specifics. Some participants felt that the interaction was generic or ‘high-level’ (P6, P7, P8, P16, P18). Below, we

describe multiple reasons for this lack of specificity in the interaction: the dilution of purpose across instances of a meeting series; the lack of technical context; confidentiality concerns in sensitive contexts; and the input modality during conversational interaction.

Recurring Meetings as Containers. When reflecting on recurring meetings, participants reverted to describing the goals and purpose of the meeting series, rather than the particular instance. This was partly because discussion topics for recurring meetings are often created at very short notice; *“as late as an hour [before the meeting], or sometimes as the meeting is going on”* (P18). In other cases, participants couldn't be sure who would turn up to the meeting each time, and therefore couldn't anticipate the discussion (P10, P13, P16). As a result, reflection with the MPA would have to occur closer to the meeting to be useful (P18, P5).

Technical or Specific Context. Meetings are often concern highly technical or specific discussions. Multiple participants were concerned that the MPA wouldn't understand what they were talking about, and they weren't willing to type out all the context (P7, P10, P14).

“You will have to explain the background of the person, of the business. What are the policies and the values of the organization? [...] I'm not so sure [...] how time consuming it will be to have to explain the whole background.” (P10 - Administration)

Without the specific technical context, some participants felt the MPA would not be able to provide useful or novel guidance. P7 felt that he and his team had already *“spent a lot of time thinking about [the risks]”* to a meeting, and he couldn't be *“bothered to... recap all of that to the AI”*.

P7 also experienced an obvious confabulation by the MPA, which suggested that he had an upcoming 'Vintage Tea Room Reservation'. This may also have broken the illusion of contextual understanding.

Confidentiality in Sensitive Meeting Contexts. Some participants felt it could be socially inappropriate to go into specifics about *“things of confidential nature.”* (P3, P10). P3 said that he would be less likely to use the tool for one-to-one meetings, because they cover sensitive topics, and for this reason, are generally held offline.

“One on ones also have sensitive topics coming up. Many a times folks may feel that it's better to discuss these things offline, without anyone listening. When I say anyone, that includes tools and systems also.” (P3 - Product Development)

Input Modality: Text vs. Speech. All participants expressed more to the researcher via speech than they did to the MPA via text. This could reflect demand characteristics, as well as the particular affordances of text versus speech. Several participants said they were unwilling to type out the details needed for the MPA to understand the specifics of the meeting (P6, P7, P10).

“It's not really useful for me because I need to type something and then it really takes some time to do this.”

(P6 - Customer Support)

Other participants valued the *“thinking aloud process”* (P9) facilitated by the researcher, and the speed that speech afforded (P16,

P9). Indeed, P14 proactively used speech-to-text to communicate with the MPA. However, there were also worries about the accuracy of speech recognition (P10, P16), the risk of feeling pressure arising from a need to maintain a conversational pace (P4), or the distracting effects of seeing a live transcription (P9).

On the other hand, for some participants, typing was perceived to improve thinking as it enables and encourages more consideration over the input provided to the system (P1, P4, P7). This means the MPA often had visibility on the *result* of reflection, but not the *process*.

5.4.2 Resistance to Making Goals Explicit in Relationship-Building Meetings. Many meetings focus on relationship building and bonding [18, 139]. Several people felt that making social goals explicit can have adverse effects, and even undermine the meeting purpose. P1 said that *“you don't ever want to feel that a relationship is prescribed”*. When explaining to the MPA why a 'Coffee Catch Up' meeting had poor attendance, P10 suggested that *“most of the participants skip it if they are too busy - as this is not considered business-oriented/necessary”*. She felt that making social goals explicit can lead attendees to deprioritize the meeting.

Others felt that being explicit about a meeting's productivity goals could also neglect the relationship-building side. P11 noted that he tended to *“become very task oriented and leave out the human side of it”*, and the MPA could potentially exacerbate this: *“This is driving me towards the task side of it.”*

P1 noted that relationship building should be considered *“business critical”* because it makes people more likely to share things, be more flexible, and go the extra mile. She felt that by being goal-oriented, the MPA potentially de-prioritized these aspects.

5.4.3 Desiring and Implementing Solutions. Solution-oriented participants expected the MPA to proactively provide recommendations to improve their meetings (P2, P5, P7, P10, P14, P17, P18).

“TYPES: give me some ideas” (P2 - Technical & Facilities) to MPA

If the MPA did not provide useful materials or solutions, some participants questioned whether reflection was worth their time.

“It's asking all the great questions, but what's the purpose?” (P13 - Product Development)

However, even if a solution was provided, meeting attendees often felt they could not implement these.

“[The interaction] is slightly less useful when somebody else is organizing the meeting - because I have to influence the meeting organizer, as opposed to taking action as the meeting organizer.” (P4 - Sales)

P5 (Customer Support) gave two further reasons why he couldn't communicate his resentment about a meeting; first, the limited scope of the meeting, and second, the inevitable responsibility that he would have to take on.

However, even reflecting on their resistance to communicating about the meeting could lead a person to change their attitude. In one example, P18 was attending a meeting she felt was *“redundant”*. The MPA encouraged her to consider strategies to cancel or merge the meeting: *“I've never asked them that, but now I'm thinking, you know, I could have done that.”* When asked by the researcher why

she hadn't taken action before, she replied that she was not *"bold or courageous"*, she didn't want *"to be the bad guy"* or to receive a lecture from her manager. However, she then said that an open-minded conversation with her manager might potentially resolve the misalignment.

"Sometimes, even by talking, you'll understand where they are coming from." (P18 - Customer Support)

By considering the potential consequences of trying to *change* a meeting, several participants explored a new way of *seeing* the meeting. So, while reflection may not always lead to a change in the meeting, it can encourage a user to adjust their attitude to the meeting, as explored in §5.2.

5.4.4 Conflating Wider Goals with Meeting Goals. Participants would often describe their broader project goals during reflection with the MPA. This can provide useful context, but there is a risk of conflating these broad goals and challenges with those of the specific meeting at hand.

For example, P3 discussed how the outcome of a meeting would effect later decisions on a project timeline. Although these decisions were not happening in *this* meeting, the MPA Reflection Summary included them as a goal for this meeting. In an another meeting, P17 needed to confirm whether a director saw value in a project; if not, P17 would cancel the project entirely. The MPA did not pick up on this subtle point, suggesting instead that the lack of manager's desire was be a potential challenge to the meeting. P17 explained that she would see identifying a lack of desire as a *success*:

"It would be successful to me if the manager doesn't want this, then we know right now and we can stop, that's great." (P17 - Product Development)

Disambiguating goals and uncertainty at different timescales is a key challenge for reflection, as seen in subsection 5.2.3.

5.5 Timing of Reflection

In the life-cycle of a given meeting, there are many potential moments to consider its purpose [139]. We asked participants to consider when they would find GenAI-assisted reflection most helpful and why. First, we show how optimal timing for GenAI-assisted reflection can be understood in terms of temporal distance from the meeting. This objective approach leads to ambiguity, as some people felt that reflection should *happen early, but not too early*, and others felt it could happen *just before a meeting, but with enough time to adapt*. Next, we show how timing can be understood in terms of the subjective needs of an individual user, with more *subjectively important and uncertain meetings* being prime candidates for reflection.

5.5.1 Objective Timing. Some participants referred to objective moments in time, relative to a meeting or meeting series, as being most appropriate for reflection. For example, several participants thought that meeting organizers should consider and articulate the purpose of the meeting as they schedule it (P2, P5, P17, P19): *"As soon as I knew there needed to be a meeting, the earliest opportunity possible"* (P2).

However, others thought that they would be unlikely to engage in reflection long before the meeting, as more urgent tasks would be prioritized, and things could change between the reflection and

the meeting itself (P1, P9, P10). Alternatively, some participants suggested that they would put some time aside to look ahead to their upcoming schedule, and reflect on multiple meetings at one time (P2, P9, P17), although P19 thought this could be *"too much"*.

Some participants suggested that reflecting just before the meeting (from five minutes to a few hours) could be useful as preparation or just to 'refresh' oneself (P1, P8, P10, P12). However, given the time constraints, this interaction would have to be shorter and more efficient.

"Even if you didn't go to this length of engagement - having a pop up, I don't know, two hours before the meeting just to say 'Don't forget, you've got this budget meeting coming up this afternoon. What are the three things you want to achieve from it?'" (P1 - Marketing)

Some participants recognized that if one wants to a change the meeting, reflection should happen earlier as time is needed to communicate and adapt to any changes.

"You can't tell people 10 minutes before - 'Oh, there's a deadline on the agenda now.' It's like, 'Oh, well, I didn't know about that.'" (P16 - Research)

Multiple participants mentioned that reflecting for every instance of a recurring meeting could be excessive, as they are so familiar with the form and purpose of the meeting (P13, P6, P8, P14, P19). As the discussion items for recurring meetings are often created at short notice (see section 5.4.1), reflection could only occur just before the meeting (P12).

"So the one-off meetings - [the MPA would] probably be leveraged more ad hoc, and perhaps, with the creation of the meeting. Whereas the recurring it would probably be, 'Oh crap, I don't have an agenda.'" (P12 - Customer Support)

However, others recognized that as recurring meetings take up a lot of time, it is useful to reflect on the purpose of a series as a whole, potentially at certain intervals relative to the series or project deadlines (P5, P7, P16, P19).

"On a cadence call, I'm thinking, I don't know, maybe quarterly, go through and make sure - are we still hitting what we intended to? Do we need to change it? Is the meeting still required?" (P5 - Customer Support)

Ultimately, the timing of reflection depends on how much preparation and coordination is required—the extent of which is closely tied to the purpose of the meeting, and the role of the individual in that meeting. Hence, the timing of reflection must be aligned with an individual's *subjective* needs.

5.5.2 Subjective Timing. Repeatedly, when asked 'when' it would be most useful to reflect on a meeting's purpose, the participants said that *important* and *uncertain* meetings would be the best candidates. We describe the subjective triggers of importance and uncertainty respectively, and how they differ between meeting organizers and attendees, and one-off versus recurring meetings.

"Any meetings that are critical or very important... Any meetings that we're nervous or apprehensive about, this would be really good." (P14 - Sales)

Meeting Importance. Appetite for reflection was greater for meetings perceived as “important” (P1, P9, P12, P13, P14, P17, P18). Importance is determined by the individual’s intention for the meeting, their role within it, and their other competing priorities. Those creating and delivering a meeting are more likely to know its purpose, and have a reputational stake in the meeting, increasing with the number of attendees present (P1, P13) and their level of seniority (P12, P13).

On the other hand, less important meetings were perceived to require less preparation. As attendees may not be expected to contribute to a meeting at all, and have little reputational stake in the meeting, they are more likely to perceive a meeting as unimportant. In contrast to organizers, large meetings are of reduced importance for attendees, as it is less likely the meeting will be directly relevant to them and their immediate work (P3, P13, P18). If invited to a meeting with no description or information, attendees may not be able to estimate its importance at all (see below in §5.5.2).

The importance of a particular instance of a recurring meeting is diluted by the fact that the next instance acts as a backup (P16). Multiple participants suggested that their recurring meetings rarely include urgent items to discuss (P17, P6).

“If we didn’t get to the last thing, then bad luck, we’ll do that next week.” (P16 - Research)

Accordingly, participants often felt relaxed enough to ‘wing’ these meetings, perhaps adding agenda items last minute.

“Not that [my co-workers] are not important, but it’s a much more casual relationship and style.” (P12 - Customer Support)

As the next section describes, uncertainty surrounding the meeting content, or the people attending, also affects the level of preparation required.

Meeting Uncertainty. Uncertain meetings are prime candidates for reflection, as they require more contingency planning to achieve an outcome. Sources of uncertainty and novelty included unfamiliar or unpredictable people (P7, P9, P10), new projects (P16), open-ended meetings (P1), and changes from established norms of the series (P1).

“This meeting is one where I would be way more interested in using a tool because there’s more uncertainty... I would use the tool because there’s more to do - I don’t exactly know what I would do with this meeting yet.” (P16 - Research)

New and young employees may benefit most from reflection, as lack of experience means that all meetings are less familiar and more uncertain (P6, P14, P19).

“[The MPA] should be mandatory for [early career hires].” (P14 - Sales)

Organizers may be more familiar with why a meeting is happening, and what will occur within it, than attendees. P12 suggested that she would be less likely to use the MPA as a meeting organizer, because she is already clear on the purpose of the meeting. Similarly, P10 and P3 suggested that the MPA tool could be more useful for attendees, who are unclear about the meeting. However, this relies on the attendee believing the meeting is important enough to prepare for.

Being uncertain about a meeting’s purpose may also reduce its perceived importance, making preparation feel less worthwhile. Attendees sometimes had such little knowledge of or control over what a meeting was about, that reflection on goals was considered pointless (P7, P13).

On the other end of the spectrum, some meetings are so regular and routine that they feel highly predictable and certain (P2, P9, P16). The meetings most commonly in this category are recurring team meetings, where all the attendees know each other and the work very well. Due to their familiarity, multiple participants felt reflection was unnecessary for regular team meetings (P8, P13, P18, P19).

“Things which happen or regular cadence, you more or less anticipate what’s going to happen.” (P13 - Product Development)

Thus, while important or unpredictable meetings are more salient candidates for reflection, meetings which are perceived as unimportant or highly predictable can also benefit from reflection, namely, *to clarify importance and renew intentionality.*

“It always feels like we’re almost rehashing at the beginning each time, so it becomes almost like just a dream.” (P9 - Sales)

6 DISCUSSION

In this study, we explored the potential of GenAI’s conversational capabilities to catalyze participants’ reflection around meeting intentionality. Rather than recommend purposes or solutions, the MPA led participants through a process of reflection about why they were involved in upcoming meetings, challenges they foresaw, and their criteria for meeting success.

Our findings extend prior research on reflection for meetings and other collaborative work, which have focused on in-meeting reflection [12] or post-meeting (retrospective) reflection [107, 132]. We found that participants agreed that there is a need for *pre-meeting* (prospective) reflection, because uncertainty about the purpose and relevance of meetings cascades to later problems during and after meetings [46].

Moreover, we expand the potential scope of reflection to a meeting’s *purpose and relevance*. We do not think it controversial to argue that clarity about *why* a meeting is being proposed is a prerequisite for positive in-meeting and post-meeting reflection on meeting challenges that have been explored in prior work, such as participation and agreement [12, 132]. These issues of equity clearly contribute to the gestalt of meeting effectiveness, but they are at least partially dependent on a shared understanding of the purpose and relevance of the meeting.

More broadly, our findings contribute to emerging work showcasing GenAI’s potential for supporting reflection through conversation, particularly for helping users articulate their own understandings rather than simply providing answers—that is, acting more as a coach [65, 110], tutor [60], or therapist [101]. They also contribute to the relatively underexplored area of ‘rapid reflection-in-action’ in the workplace [53]. While many participants noted that the MPA as it was presented would likely be too heavyweight for regular usage, some nevertheless saw its value and reported positive outcomes, which is encouraging for further exploration.

Our findings underscore the pervasive lack of intentionality in meetings [139], as evidenced by participants' reflections on their broader meeting experiences in response to the MPA's questions. For example, the reported positive value of going through the MPA's reflective process suggests that many participants' regular meetings lacked clearly articulated purposes (§5.2.1). Participants also reported that while prioritizing discussion topics does occur in regular meetings and can be beneficial, it often does not come from or lead to specific, operationalized goals (§5.2.2). Participants' perceptions that the MPA could help reduce stress about an upcoming meeting implies that regular meetings can induce anxiety and lack supportive structures (§5.2.4). Finally, that participants felt that the MPA helped them understand perspectives for better collaboration and flexibility highlights a general lack of intentionality around empathetic meeting practices (§5.2.5).

Below we discuss how our findings address our three overarching research questions concerning (i) the process of AI-assisted prospective reflection, (ii) the impacts of such reflection, and (iii) the implications for designing AI assistance for reflection. Finally, we discuss the potential risks and limitations of the current study and ideas therein, and provide directions for future work.

6.1 Process of AI-assisted prospective reflection (RQ1)

We observed extensive variety in the meetings in our dataset (Appendix B), as well as participants' initial responses to the MPA, ranging from sparse to detailed, and ambiguous to precise. This variety echoes that observed in prior work [77, 94, 115]. It also underscores the diversity in people's predisposition to reflection, and the value of adaptive AI assistance which can meet people where they are. Bentvelzen et al. [17] argue that "reflection often does not occur automatically, but needs to be encouraged". To this end, the MPA's responses sought to provoke deeper reflection, elicit further detail, and prompt prioritization and planning in participants.

As well as directly probe for further information, the MPA summarized participants' reflections, sometimes even commenting on the situation (as in §5.3.2). This gave the impression that the MPA understood the content of the reflections, and even the underlying context, which was a key reason for participants describing the value of the MPA as a coach (§5.2.4). The MPA thus mimicked *active listening* [127]. Developed from therapeutic origins to improve industrial relations, active listening demonstrates that a listener has heard the total meaning of a speaker, responds to feelings, and notes all cues. This approach induces speakers to recall more information, which eventually becomes part of their self-knowledge, and encourages cognitive flexibility about the topic at hand [76].

"I really like this one – 'handling detail preferences can indeed be challenging'... because it's like the bot is understanding what I actually mean and what I'm aiming to do." (P10 - Administration)

The MPA's responses often deployed reflection techniques such as *re-framing* (e.g., from asking about participants' *role* in meetings to asking about what *value* they see in it), or *provocation* (e.g., asking repeated 'why' questions, or insisting that participants think of challenges) [17]. Moreover, by suggesting alternatives ("How else...") and conditionals ("What if..."), it encouraged participants

to consider different perspectives, and thereby engage in divergent thinking. This approach mirrors that observed in human reflective talk about routines—of which meetings a prime example—which often leads to a *change* in routines [48].

Divergence was often followed by encouraging convergent thinking about these ideas. For example, the MPA supported prioritization by encouraging the comparison of different options and their outcomes ("Which..."), and identifying the most important (§5.3). Prioritization is a critical skill for intentionality, requiring selection between intentions competing for resources and attention [58, 103, 174]. The MPA also facilitated problem-solving, by asking participants to consider mitigation plans and solutions to challenges ("Why not..."). As a final step to encourage convergence, the MPA summarized the entire reflective interaction for users to consider, and ideally *act* upon (see §6.3.2). Making reflection actionable was a key focus in our approach, directly addressing Meyer et al. [94], who suggest that "self-reflection should be integrated into existing systems and workflows". As we discuss below in §6.2.2, participants took a wide range of actions based on the Reflection Summary and other action-oriented prompts from the MPA.

Throughout the interaction, the MPA dynamically adapted its questions to the meeting context and the unfolding conversation. Yet, some participants still found the interaction too vague, echoing [77], and cited a need for injecting technical or otherwise specific context into the MPA (see §6.3.1 for more).

6.2 Impacts of AI-assisted prospective reflection (RQ2)

We observed that the reflection process had diverse impacts on participants, including changes in thinking and in intended and actual (self-reported) behavior. Heeding Bentvelzen et al. [17]'s call for more evaluation of reflection *per se*, rather than system usability, our findings focus on this aspect.

6.2.1 Impacts on thinking. Through conversing with the MPA, implicit, unclear, or undefined meeting goals, challenges, and success criteria were made explicit through articulation. A key impact of this on thinking was the clarification and distillation of purpose and associated mental preparation for an upcoming meeting (not unlike the increased self-awareness observed in other reflection studies [77, 78, 94]). A related impact was the prioritization of goals. These findings affirm the attention-focusing, energizing, and knowledge-activation effects of goal setting [84], and align with work on daily workplace reflection via goal setting and planning [94, 109, 165].

Another impact was the identification and consideration of unknowns. This echoes Baumer [15]'s concept of 'breakdown' during reflection, revolving around ambiguity or uncertainty. It also ties into research on contingent planning, in which uncertainties (e.g., potential interruptions) are anticipated and planned for [109]. Indeed, although participants varied in their desire to engage in contingent planning (see §5.2.3), engaging with the MPA reminded some participants to better prepare for the meeting (e.g., through research or other pre-meeting work), and many reported feeling more prepared after the interaction. Meetings, given their interpersonal and dynamic nature, are particularly susceptible to uncertainties stemming from unexpected updates, new attendees, or off-track

discussions. To this point, uncertain meetings were perceived to be particularly important targets for prospective reflection (§5.5.2).

A third impact was a change in people's perspectives and flexibility, with participants empathizing with other meeting attendees, or anticipating flexibly altering a meeting as necessary. This echoes the concept of 'transformation' during reflection [15, 54], and aligns with other observations of perspective changes during reflection in the workplace [77] and personal well-being [5, 79, 99]. Our findings highlight the value of such perspective changes in a social context, where they may increase empathy and potentially cooperation between collaborators.

The above impacts relate to several participants' perception that interacting with the MPA felt like therapy or coaching, with some participants reporting a reduction in anxiety or stress. Whereas prior work directly explored reflecting on emotions [77, 165], or included a focus on well-being goals (e.g., work-life balance [94]), the MPA was not explicitly designed for this. Nevertheless, our approach of encouraging participants to articulate meeting goals, challenges, and success criteria was sufficient to trigger a perception of therapy and coaching. We speculate that the MPA's meta-prompt instructions of active listening and gentle probing contributed to this [47]. Yet, although this impact is positive, the observed anthropomorphism of the MPA is not without risks to users (see §6.4.1).

6.2.2 Impacts on intended and self-reported behavior. Beyond changes in participants' thinking, we found that reflection led to changes in their intended and self-reported behavior, which we observed during the participatory prompting sessions as well as in the follow-up surveys collected after participants' meetings. This is the clearest evidence of learning or change resulting from reflection [115]. Once a meeting's purpose was articulated (and in many cases, clarified), participants' actions were geared towards achieving this purpose, such as sharing an agenda, or requesting pre-meeting preparation from others. Meyer et al. [94] similarly found that setting daily work goals led people to start identifying actionable strategies towards their achievement (see also [70, 77, 79]).

The collaborative nature of meetings demands effective communication, and indeed many of the impacts and actions we observed were communicative, either explicitly (sharing an agenda) or implicitly (appearing prepared and confident in the meeting). We suggest that the conversational format of the MPA interaction, requiring articulation of purpose, may be particularly beneficial in this context [17, 79]. The Reflection Summary also played a valuable role here, as reported by participants. Yet not all communicative actions were universally endorsed. Sharing potential meeting challenges was found by some participants as a means to improving accountability during meetings, while others viewed it as potentially offensive or inappropriate. Sharing such challenges can be seen as a means towards collaborative contingent planning, yet it requires delicacy and 'buy-in' in the interpersonal context of meetings.

A particular action we observed was participants asking other attendees to contribute to the meeting agenda. Likewise, we found that participants' actions resulted in other reported downstream effects, such as increasing meeting attendance, engagement, and ultimately effectiveness, by encouraging meetings to stay focused on their purpose. We therefore demonstrate that, beyond impacting

participants' own intentionality, individual reflection in a collaborative context can potentially catalyze others' intentionality as well, and thereby improve collaboration.

6.3 Implications for design (RQ3)

Based on our findings, we present design implications and example features, focusing on considerations for system design (§6.3.1) and for workflows (§6.3.2). Some of the suggestions target meta-prompt design (e.g., deploying 'active listening'), others involve integrating relevant contextual data to adapt the interaction to people and workflows, and others involve considerations of interaction modalities (for a summary, see Table 3). This informs future work to evaluate the impact of GenAI-assisted reflection on meetings in more realistic workflows and using quantitative approaches such as field experiments.

6.3.1 System design considerations.

Using active listening. Systems designed to elicit information and encourage reflection may benefit from deploying active listening, as this promotes information recall and cognitive flexibility in speakers [76, 169]. Good active listening involves paraphrasing with empathy, asking for clarification when relevant, and customizing by drawing on relevant material from the conversation and/or contextual resources [76]. However, as we outline in §6.4.1, these same features encourage anthropomorphism of AI which carries risks to users—mitigating these risks should therefore also be considered in tandem.

Encouraging divergent and convergent thinking. Systems should also consider promoting divergence to understand meeting purpose and challenges, and then convergence on success conditions and priorities. Prior work has found that divergent thinking followed by convergent thinking maximizes creativity during creative processes [142], and is especially well-suited to solving problems that are ill-defined [164], such as uncertainty about meetings (§5.5.2).

Divergence can be encouraged by asking people to consider alternatives ("How else...") and conditionals ("What if..."). As an extreme, an AI assistant could challenge the user's current perspective and juxtapose it against alternatives [133]—which some participants explicitly requested (§5.2.4). To this end, Cai et al. [30] sketch out an initial design space for 'antagonistic AI', including interaction dynamics, tone, and other dimensions. Convergence then allows these ideas to be sorted and prioritized to inform the best course of action. This could be achieved by encouraging comparison of options and their potential outcomes, as a form of contingent planning [109].

Prioritizing incisive questions over immediate solutions.

Some participants were frustrated when the MPA (per our instructions) would not immediately provide purposes or solutions (§5.4.3). Many users expect GenAI systems to rapidly produce detailed outputs in response to short inputs. Yet, as Sellen and Horvitz [140] argue, access to unlimited automated assistance may diminish human cognitive skills in creativity, evaluation, and correction. Since the very problem we are trying to solve is one of *unthinking* engagement in meetings, reflection is the *human* skill that we aim to

Table 3: Summary of design implications, their design targets, and area.

Area	Design target	Design implication
System design	Meta-prompt	Mimicking active listening can be used to better elicit information and encourage reflection, but also increases anthropomorphism of AI and associated risks.
	Meta-prompt	Encouraging divergent thinking can increase perspective taking and consideration of alternatives, whereas convergent thinking can promote prioritization and planning.
	Meta-prompt	Prioritizing incisive questions over immediate solutions can encourage active thinking and deeper reflection in users, rather than passive receipt of information.
	Data integration and meta-prompt	Contextual information from enterprise knowledge bases can be used to reduce extraneous cognitive load, personalize the interaction, and prime reflection.
	Data integration and meta-prompt	The social context of meetings should be treated with sensitivity and could be used to inform the type of reflection guidance provided.
Workflows	Data integration	Contextual information could be used to inform the ‘when’ and ‘who’ of reflection: the optimal timing and targets of reflection (i.e., organizers or attendees).
	Interface	Reflection could be made directly actionable by embedding it (and its outputs) in workflows, rather making it a standalone activity.
	Interface	Reflection stimulated by provocation is valuable but consider supporting it in private interfaces to alleviate confidentiality and sensitivity concerns.
	Interaction modality	Consider how to best harness speech and text for effective reflection, while providing choice of input modality to accommodate preferences and accessibility needs.

build. Even if an AI system is trained on a large corpus of scenarios, its value for users may not be best realized in pattern-matching a problem and generating solutions. Rather, the user should be guided until they are unable to continue, and perhaps even then solutions or explanations should be phrased to encourage active thinking from users [44, 79]. Education research underscores this: technology-mediated goal setting, where agents collaborate with users, improves self-regulated learning over conditions where goals are provided by the system [64, 157].

Designing systems to prompt people to think, rather than passively receive information, raises the risk of increasing cognitive load—the amount of cognitive resources devoted to a task [151]—as noted by self-regulated learning research [45, 153]. Cognitive Load Theory distinguishes between *intrinsic* cognitive load (stemming from the inherent complexity of the learning material) and *extraneous* cognitive load (everything else, such as the presentation of the material) [150].⁴ If reflection is viewed as a type of learning about the self, then we can analogously distinguish between cognitive load devoted to aspects intrinsic to reflection (e.g., re-evaluating experiences) and those that are not (e.g., recalling detailed information). The former type of load may be unavoidable, although evidence suggests it may decline over time, as users adapt to the reflection process and aspects of it become implicit [100]. Systems, however, should aim to reduce the latter—i.e., all load that is not intrinsic to the reflection process itself [141], such as that associated with retrieving information, as we discuss below.

Context for reducing cognitive load, personalizing, and priming reflection. Context is essential to enabling personalized

reflection [77, 94, 165]. The MPA had access to the participant-provided meeting details (e.g., title, date, description etc.), yet collaborative software increasingly indexes the files, collaborative networks, meeting transcripts, and messages created during work, into knowledge bases [166, 167]. Surfacing context can help expedite reflection while alleviating users from the pressure to explain ‘everything’ (in contrast to §5.4.4). This should mitigate the burden on users to provide context (as per §5.4.1) and thereby reduce extraneous cognitive load [141].

Beyond alleviating cognitive load, context can encourage effective reflection by getting users into the ‘frame of mind’ for a given meeting amid their busy schedules (as per §5.5), and prime users to consider relevant aspects and resources (e.g., as per §5.2.6). Accordingly, rather than dumping all possible context onto the user, context should be used to personalize goal-oriented questions and follow-ups. Surfacing the *kind* of context available or key details (e.g., supporting documents, email threads), rather than complete verbatims, may prime reflection while minimizing cognitive load. Moreover, a system could identify key unknowns from these documents (e.g. missing budgets), asking the user to elaborate if they can, and mitigate if they cannot (as per §5.2.3). Lastly, with all this context, a key technical challenge is for systems to disambiguate wider project goals and meeting goals to support reflection at the appropriate level (as per §5.4.4).

Social context and the nature of reflection. Participants resisted explicit goal reflection in relationship-building and more informal meetings (as per §5.4.2). However, there is a ‘catch-22’ here: unless contextual data makes this social goal clear, systems may first need to prompt reflection to understand the meeting’s purpose and then adapt the interaction accordingly. More broadly, we argue that—although reflection need not dwell on the relationship-building aspect of meetings—merely *identifying* this as a meaningful

⁴Historically, germane cognitive load was also distinguished, although recent formulations do not do so [150].

purpose for a given meeting supports intentionality by allowing users to proceed without worrying about a meeting's 'effectiveness', or otherwise make informed choices about their meetings [139]. Systems should nevertheless treat this dimension with sensitivity, reassuring users to approach such meetings with their own judgment. Moreover, even for meetings that are primarily productivity-oriented, systems should respect their social value, and remind users of this value, where relevant.

6.3.2 Workflow considerations.

The contextual 'who' and 'when' of reflection. Alongside informing the content of reflection, contextual awareness should also inform the interlinked aspects of the 'who' and 'when' of reflection. For organizers, meeting creation is a key opportunity to reflect on the meeting purpose and the relevance of invitees, whereas later time points better serve reflection for timely preparation. By contrast, invitees can be nudged to reflect when receiving invitations or later on, depending on the uncertainty around the meeting and the preparation required (see §5.5). Reflecting on recurring meeting series can be done by all attendees at occasional intervals to assess, and potentially renew, intentionality.

There is also an opportunity to support 'bulk reflection' over multiple meetings. As above, this contextual approach to considering productivity [74] can maximize the value of getting into a reflective mindset, and could also allow comparison between and across meetings.

To inform the above, context should also be used to estimate the relative importance and uncertainty of meetings (as seen in §5.5). This could be gauged from data such as the individual's contribution to the meeting, their tenure in the company, the size and seniority of the audience, and apparent deviations from the 'norm' of a recurring meeting. More important and uncertain meetings require more time for preparation, and so reminders to reflect could occur earlier. By contrast, individual instances of recurring meetings tend to be considered less important and highly familiar, so GenAI-assisted reflection could be quick, concise, and occur just before the meeting, to encompass the latest updates.

Embedding reflection in workflows for actionability. A key motivation for our probe design was to make reflection actionable—i.e., by providing users with concise Reflection Summaries to use in their workflows. Our findings around changing the meeting, including participants' uses of the summaries (§5.3), underscore the importance of reflection for action among knowledge workers. Confidential and sensitive contexts aside (see §6.3.2), reflection should be embedded in collaborative workflows to increase its value and offset its time cost.

One approach is to use GenAI-assisted interaction to *create reflection-based artifacts to facilitate collaboration*. Reflection content (e.g., drawn from the MPA Reflection Summary) could be used to populate a goal and an agenda in the meeting invitation, helping users overcome a 'blank page'. A more detailed and actionable invite could become a source of consistent focus on meeting purpose and challenges. Technological artifacts are key for creating external memories which can be recognized, referred to, and acted upon [43, 106].

Another approach is to bypass artifacts and *make reflection itself collaborative* [114]. Reflection on shared purposes, necessary preparation, and deliverables could be encouraged in common communication channels associated with meetings. This communication-focused AI should use diplomatic phrasing, and call in others to clarify and contribute to the meeting purpose [35, 63, 85]. AI could support collaborative consideration of goals ahead of a meeting, and integrate them to create a collective purpose and agenda.

Provocation and private vs. public reflection. Not all reflective output should be public and collaborative. Meetings often involve conflicting perspectives (as in §5.2.5) or other challenges that may be subjective or sensitive. Addressing these may require provocative reflection, such as considering worst-case scenarios, and engaging with devil's advocate questioning, that may be better placed in private interfaces [77] (e.g., calendars, notebooks), rather than those for group communication (e.g., chat, invites, documents). Here, an AI could support the user to reflect honestly without worrying that others may see this deliberation out of context, thereby partly mitigating some participants' confidentiality concerns (§5.4.1).

Choice of input modality. In our protocol, participants reflected using text (with the MPA) and speech (with the researcher). While speech may be faster in some contexts [121] and enables more natural conversational dialogue [77, 173] (for those able to speak), text (as a form of writing) encourages clarity of thinking [77, 100]—how can we harness the benefits of both? Prior work has found that the voice modality for workplace reflection is easier for question-answering, more personal, and engaging [77]. Compared to written inputs, unfiltered speech may reveal more hesitations, corrections, tone, and humor that indicate subtle emotions underpinning a true perspective of a meeting, such as perceived irony, frustration, or dissatisfaction (as in §5.4.1)—however, we must not overestimate the ability of AI systems to pick up on these subtle cues (nor, for that matter, adequately represent all spoken languages [37]). In the future, such inputs could be useful indicators for an AI assistant to identify uncertainty and thus offer scaffolded questioning [56, 80]. While voice may not be suitable for all participants, such as those requiring confidentiality in public spaces, or those with disfluencies [93], AI agents should offer a choice of multiple input modalities [77]. Another possibility is to integrate modalities [34], with voice used for the user's reflection process, and transcript summarization used by the system to support convergence and action.

6.4 Potential risks and study limitations

6.4.1 Potential risks. While encouraging intentionality through probing questions could have beneficial effects for meeting efficacy, there are also potential risks that come with the territory. We suggest that, to be most effective, these reflective interfaces should be embedded in users' workflows. However, if these workflows are monitored and surveilled by employers, this could expose the user's intimate reflections on uncertainties, conflicts, and errors, reveal their confidence, interpersonal perceptions, and mistakes [88, 124]. Use of this information during negotiations and performance evaluations could further exaggerate the asymmetry in power between

employers and employees [69]. While in this study we have assumed that users would decide when to reflect themselves, if employers made this process mandatory, this could have implications for trust, potentially leading to rebellious and insincere use, as users take measures to reduce their exposure. Hence, it is crucial that users are aware of who could have access to their reflective input, so they can control it. However, self-censorship in fear of privacy could reduce the ability of interfaces to probe deep introspection, where candid and vulnerable interaction is important.

A design feature which could exacerbate this challenge is the deployment of anthropomorphic conversational agents [8]. Research suggests that certain linguistic expressions can convey human-likeness, suggesting the conversational interface has internal states, social positioning, materiality, and autonomy [47]. Indeed, the MPA emulated many of these expressions, suggesting self-assessment, self-awareness, intentional effort, and, most importantly, asking incisive questions to ‘manipulate’ the dialogue. While these qualities may improve user engagement and reflection, anthropomorphism has also been associated with over-reliance on systems, where users place higher confidence in the system than themselves [39, 156], as well as unintended disclosure of sensitive information [73, 124], and emotional reliance [113]. Users may end up talking to and reflecting with AI more than they do other people [163]; indeed, some participants were concerned that systems like the MPA could replace meetings altogether. Balancing these opportunities and challenges is complex, and requires a close analysis of specific socio-technical contexts, as certain workplaces and roles may be more susceptible to some risks over others. For example, those working in Human Resources may handle more sensitive information about colleagues, while workplaces which have strict time-reporting systems or are subject to liability, such as law firms, may have greater indexing of employee activity. In the following section, we describe the limitations of our methodology, and suggest how future work could build on the findings presented here.

6.4.2 Study limitations. Assessing our study design against the criteria for trustworthiness in qualitative research [6], we highlight limitations in the recruitment process, the resulting sample, and protocol.

Participants responded personally to our recruitment emails, suggesting a level of self-selection into our sample. Thus, the participants may have been more thoughtful or opinionated about meetings than a broader cohort might be. Meeting organizers may be biased in evaluating their own meetings [38], and we had no method for directly identifying and accounting for bias. In common with exploratory qualitative work, our sample was constrained, coming from just one company, and while the participants varied in gender, age, work area, managerial status, and location, a larger and more diverse sample could uncover a greater plurality of experiences of meetings, which could provide richer insights.

The participatory prompting methodology has limitations [49, 134]. The parallel conversations between the participant and AI, and the participant and researcher, risk the conflation of human and AI-driven reflection. We have offered rich descriptions of the participants’ quotes and their context to improve the transferability of the findings. Researcher presence may have also brought about

demand characteristics in participants, affecting their level of engagement with the interaction, and their reflections on the system’s efficacy. Furthermore, some interactions were cut short to ensure there would be time to reflect on all example meetings. This means the ‘full’ course of interaction was not observed in some cases. The first author spent around an hour with each participant; more detailed and nuanced insights could be achieved through longitudinal observation periods.

6.5 Future work

Though research on supporting reflection continues to increase, many aspects remain underexplored (see also [17]). Building on our exploratory research, future work could assess the impacts of AI-assisted reflection in a non-participatory (field) setting, and over longer periods of time. Particularly relevant for GenAI which can easily integrate and transform text, future work should explore how to best leverage precise context to support reflection. A key challenge in system personalization is determining what contextual information is important or relevant to retrieve and inject into a particular interaction [91, 131, 175]. Building on §6.3.1, what are effective ways to integrate and present contextual information during reflection such that it supports memory retrieval, deeper reflection, and planning, all while reducing extraneous cognitive load? Likewise, future work can also explore how we can design reflection-supporting interfaces that harness the benefits of both speech and text, while ensuring accessibility for those that are not able to speak or type.

Extending our individual reflection approach into a collaborative experience is another promising avenue [114]. How might AI assist teams to collaboratively reflect on their upcoming meetings, and how could this helpfully blur the line between synchronous and asynchronous collaboration?

Whereas we scoped our reflection study to productivity-oriented aspects of meetings, future work should explore how reflection can support other aspects of meetings and work, such as well-being, as well as social dimensions of meetings which we found to be particularly delicate here (as per §5.4.2). Finally, it will be important to explore the effect of reflection on meeting intentionality in other linguistic and cultural contexts that vary in meeting practices [83, 158].

7 CONCLUSION

Despite advancements in meeting software, support for people to understand and communicate the underlying reasons for holding meetings remains elusive. We argue that addressing this issue requires more nuance than just improving procedural materials such as agendas. Rather, people could improve their meeting intentionality overall by reflecting on why they are meeting, what success looks like, and potential challenges to success. This involves navigating the inherent uncertainties and complexities of collaborative efforts. This study explored how GenAI’s conversational abilities can guide participants through prospective reflection and catalyze the articulation of meeting intentions. When used as a dynamic tool for thought, AI can foster the critical thinking and metacognition necessary for clarifying meeting intentions. However, users may struggle to adopt such tools because of the time it takes to reflect,

and expectations for GenAI to provide immediate answers. Nevertheless, to solve the problem of *unthinking* engagement in meetings, reflection is the *human* skill that GenAI can help us develop.

ACKNOWLEDGMENTS

We thank all the participants for sharing their time and perspectives with us, and the reviewers for their constructive feedback.

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A PARTICIPANT DETAILS

Table 4: Participant demographics.

Dimension	Sub-dimensions	Participants
Gender*	Male	8
	Female	10
Location	United States	12
	United Kingdom	3
	Taiwan	1
	Netherlands	1
	India	1
Age	18-29	5
	30-44	3
	45-59	8
	60 and over	2
Work area	Administration	1
	Customer Support	5
	Product Development	4
	Research	2
	Sales	3
	Technical and Facilities	2
	Marketing	1
Seniority	Principal	5
	Senior	8
	Early Career	5
Managerial status	Manages a team	5
	Individual contributor	13

*For gender, no participants identified as non-binary or declined to answer

B MEETING DETAILS

Table 5: Participants' Meetings.

PPT ID	Type of meeting	Meeting Description (summarized by researcher)	Attendee count (approx.)	Meeting duration	One-off / recurring
1	Attending and anticipate being ineffective	Project budget planning meeting	4	30 mins	One-off
1	Familiar and organizing	Regular sync with P1 and with collaborating team	3	15 mins	Recurring
1	New and organizing	Introductory meeting with P1 and new Employee Resource Group contact	2	30 mins	One-off
2	Attending and anticipate being ineffective	Weekly scrum meeting attended by P2	13	30 mins	Recurring
2	Familiar and organizing	Weekly scrum meeting led by P2	13	30 mins	Recurring
2	New and organizing	Meeting for P2 to obtain training requirements from customer to support training development	2	30 mins	One-off
3	Attending and anticipate being ineffective	Product team office hours (attending to clarify product deprecation timeline)	10	60 mins	One-off
3	Familiar and organizing	Weekly check-in with direct report about projects, work-life balance, and career	2	50 mins	Recurring
3	New and organizing	Preparation and consensus-gathering for presentation to CVP	4	30 mins	One-off
4	Attending and anticipate being ineffective	Weekly scrum meeting for customer-facing staff	10	60 mins	Recurring
4	Familiar and organizing	Overview of product feature basics for a customer	7	60 mins	One-off
4	New and organizing	1:1 informational meeting with P4 and hiring manager for new internal role	2	30 mins	One-off
5	Attending and anticipate being ineffective	Internal meeting with customer-facing staff to review sales targets	8	30 mins	Recurring
5	Familiar and organizing	Customer-facing meeting about customer goals and progress	10	60 mins	Recurring
5	New and organizing	Internal meeting with customer-facing staff around product consumption metrics	3	30 mins	One-off
6	Attending and anticipate being ineffective	Weekly office hours for Customer Success Account Managers	2	15 mins	Recurring
6	Familiar and attending	Monthly team sync for Cloud Solution Architects	14	55 mins	Recurring
6	New and attending	Internal meeting with product manager and customer-facing staff to develop new user stories	7	30 mins	Recurring
7	Attending and anticipate being ineffective	Weekly project sync	10	25 mins	Recurring
7	Familiar and organizing	Research team weekly sync	5	55 min	Recurring
7	New and organizing	Meeting with external vendor to review progress on using custom software for a research project	4	60 mins	One-off
8	Attending and anticipate being ineffective	Twice weekly meeting with customer-facing staff and technical support to discuss customer product issues	5	60 mins	Recurring
8	Familiar and organizing	Daily meeting with customer-facing staff and technical support to discuss customer product issues	10	30 mins	Recurring
8	New and organizing	Customer-facing meeting about customer's product issue	4	30 mins	One-off
9	Attending and anticipate being ineffective	Regular scrum meeting with customer account staff from various disciplines	16	60mins	Recurring
9	Familiar and organizing	Regular sync with cross-functional team in preparation for upcoming presentation at event	5	30 mins	Recurring
9	New and organizing	Customer-facing meeting to discuss AI use case scenarios	6	30 mins	One-off
10	Attending and anticipate being ineffective	Weekly coffee catch-up for business operations team and collaborators	13	25mins	Recurring
10	Familiar and organizing	Bi-weekly meeting for people managers within a research organization	5	30 mins	Recurring
10	New and organizing	Introductory meeting between a principal manager and P10, who will act as a personal assistant to them	2	15mins	One-off
11	Attending and anticipate being ineffective	P11 presenting feature/tool/product to a pre-sales team to help them see its value	4	30 mins	One-off
11	Familiar and organizing	Recurring 1:1 between P11 and their manager about work progress	2	30 mins	Recurring
11	New and organizing	P11 presenting feature/tool/product to a partner to educate and encourage use with their customers	4	80 mins	One-off
12	Attending and anticipate being ineffective	P12 is attending this meeting with another team to improve the pipeline quality of escalated work items.	19	30 mins	Recurring
12	Familiar and organizing	P12 leads this recurring meeting with her direct reports.	19	60 mins	Recurring
12	New and organizing	P12 leads this recurring mentoring session for those aspiring to be managers	11	60 mins	Recurring
13	Attending and anticipate being ineffective	P14 attends this meeting to provide ad-hoc feedback to research and data science teams.	18	50 mins	One-off
13	Familiar and organizing	Weekly scrum meeting with team members in various locations around the world.	8	25 mins	Recurring
13	New and organizing	P13 is meeting a customer for the first time to better understand their problems with a feature.	3	40 mins	One-off
14	Attending and anticipate being ineffective	P14 is attending this to teach people how to find new opportunities and enter them into a system.	4	30 mins	Recurring
14	Familiar and organizing	P14 is attends this regular meeting with a client, encourage them to use the services.	15	45 mins	Recurring
14	New and organizing	P14 and her team are meeting to identify new metrics to evaluate their new customers.	2	60 mins	One-off
16	Attending and anticipate being ineffective	P16 is attending this recurring meeting for a project with external collaborators, but the work is currently blocked.	7	30 mins	Recurring
16	Familiar and organizing	Research team weekly sync	7	60 mins	Recurring
16	New and organizing	P16 is organizing a meeting with an IP team to see if they can publish their work.	15	60 mins	One-off
17	Familiar and organizing	P17 is organizing a meeting to see whether a director wants and needs a feature she and her team are developing.	3	30 mins	One-off
17	New and organizing	P17 is organizing this meeting to plans a series of workshops with external presenters.	5	30 mins	One-off
18	Attending and anticipate being ineffective	P18 attends this meeting where another team shares their insights with her team.	11	30 mins	Recurring
18	Familiar and organizing	Weekly product team sync	10	60 mins	Recurring
18	New and organizing	P18 is meeting with a director to gain their sponsorship for her career, and learn about potential opportunities.	2	30 mins	One-off
19	Attending and anticipate being ineffective	P19 attends this meeting with another team to keep up to date on their progress.	14	60 mins	Recurring
19	Familiar and organizing	This is a regular 1:1 with a colleague to work on some slides for an upcoming conference.	2	30 mins	Recurring
19	New and organizing	P19 is organizing this meeting to create a roadmap for all ongoing and upcoming projects.	6	60 mins	One-off

C STUDY PROTOCOL

C.1 Onboarding survey (20 minutes)

(1) Please find three meetings coming up in the next 1-2 weeks which fit the following descriptions. Also, each meeting should be happening in the next two weeks, and must have fewer than 20 attendees. A) A meeting you are organizing for the first time, e.g. a meeting with a new customer or collaborator, a kick-off meeting for a new project with your team, or a type of meeting you have never organized before.

B) A familiar meeting you are organizing, e.g. a recurring meeting with your team, a meeting with people or a project you know very well.

C) A meeting you are attending that you anticipate being ineffective (but not for logistical or scheduling issues), e.g. a vague or confusing meeting, a meeting you don't know much about, a meeting where there could be conflict

For each of these meetings, please provide the following details:

- The meeting title (if you'd like, replace others' names with pseudonyms like P1, P2 etc.)
- The meeting description (if provided) (please remove the names of attendees and organizations, and replaced with pseudonyms like P1, O2 etc).
- The date of the meeting
- The time of the meeting
- The duration of the meeting
- Whether this is a one-off or a recurring meeting
- The number of attendees (including yourself)
- The type of attendees (Refer to high-level characteristics such as their job role, seniority level etc. Please replace any identifying information (e.g., "Director, HR in EMEA" -> "Director")

(2) In the past three months, excluding "town hall" meetings, what proportion of your work meetings...

- ...had a clear goal or purpose which was communicated in advance?
- ...involved people outside of [company]?
- ...do you lead or organize?

[None or almost none of them / A few of them / Less than half of them / About half of them / More than half of them / Most of them / All or almost all of them]

(3) Age

- 18-29
- 30-44
- 45-59
- 60 and over
- Prefer not to answer

(4) Gender

- Man
- Woman
- Non-binary/gender-diverse
- Prefer not to answer
- Self-described:

(5) Which high-level description best suits your primary functional work area?

- Accounting, Finance, and Purchasing
- Administration/Management/Operations/Strategy
- Customer Support
- Distribution
- Human Resources
- Technical (incl IT) and REF Support
- Legal
- Marketing/Promotion
- Product development
- Research
- Sales

(6) Which of the following most accurately reflects your role?

- Manager
- I lead a group but I'm not officially a manager
- Individual contributor

(7) Which of the following most accurately reflects your current job level?

- Above Principal
- Principal
- Senior
- Early career

(8) Do you have any other relevant information about your job role that you'd like to share? (Please do not include any personal information)

(9) Do you have any other information or feedback on the survey that you'd like to share? (Please do not include any personal information)

C.2 Participatory Prompting Session (1 hour)

The participants will join a remote video call. The researcher will introduce themselves and start recording.

The researcher will introduce the participant to the idea of a Meeting Purpose Assistant. Participants will be provided a link to access the study interface. The researcher will upload the participant's meeting summaries developed in the preparation session. The system will start the interaction with an initial question for the user. The user will then freely interact with the system for up to 10 minutes per meeting, or until they are satisfied with its output (whichever comes first). If the participant gets stuck at any point, the researcher will help them resolve any issue. After completing the following exercise for each meeting, the researcher will move onto the interview session.

"Today we will be exploring how you could interact with a Meeting Purpose Assistant to reflect on your purpose for a meeting. You have told us about three of your upcoming meetings, and we will reflect on each of these in turn. I have uploaded the information we prepared the other day, so the system should refer to this information as you interact with it. You can see there are two panels. In the first panel, you are able to send messages to the Meeting Purpose Assistant, to discuss and reflect on the upcoming meeting. In the second panel, the Meeting Purpose Assistant will produce an output which you could use in your workflow. This could include a meeting summary, with a list of goals, or agenda items, for example."

"Please think aloud whilst you are interacting with the system, so we know what is going on in your mind! And feel free to ask me any questions you may have, and we can resolve any issues together."

"Let's start with meeting A/B/C. The Meeting Purpose Assistant should start the interaction with a question, and you can take it from there."

The participants will be asked a number of the following questions during and after their interaction with meeting purpose elicitation tool. The questions asked will depend on the content of the interaction, and the meetings they reflected upon.

During the interaction

Content

- Are there questions you would like / not like to be asked in this process?
- Are there types of outputs you would like to see from this process?
- Technology, interfaces, and interaction modes
- How do you feel about a text-based or voice-based conversation?

- Which application would this goal reflection process make the most sense? Calendar scheduling, Teams Chat, Email
- Compared to your usual meeting habits, did your interaction with the LLM cause you to think about these meetings differently?

Value

- How would you use this output? Would you share it? Would you like a more private version, or one more tailored to team goals?
- Attendees
 - Did this interaction influence your decision to attend these meetings? If so, how?
 - How would this interaction influence your decision to multitask in these meetings, or not? Could it affect multitasking in others?
- Organizer
 - How this interaction influence your decision to cancel these meetings (and find an alternative approach)?
 - How this interaction influence who is invited to these meetings?

After the interaction

- What are your thoughts on AI-assisted goal reflection for meetings? Could you see it having any impact?
- How did this process feel as an organizer vs. attendee?

Content

- Relative to the meeting itself, when would the best times be to reflect on the goals of a meeting? Would different times benefit from different types/lengths of reflection?
- Would you like to reflect on one meeting at a time, or on several upcoming meetings at once (e.g. Viva Insights)?
- Would this interaction support your preparation for a meeting, or hinder it? How?
- Would this interaction make you more or less flexible on your goals for a meeting?
- How do you see this reflection process in the context of your broader workflows? How do you feel about this reflection process for personal vs. team goals? Could you see this process being collaborative?
- Do you think this interaction would lead to different goals for different attendees of the meeting?

Value

- Thinking about the types of meetings you have (in your team, with other teams, with external partners etc.), do you think this goal reflection process would be more or less useful for some of these?
- How useful would it be for recurring series? Or instances of recurring meetings?
- How would you feel if a colleague went through this process for a meeting they organized with you?
- How would you feel about a meeting moderation system that could act on the information surfaced here to help you have better meetings? e.g. if an AI could check for these goals and keep you on track during the meeting?

C.3 Follow-up survey (7 minutes)

Welcome back to our study – this the final activity.

By now, you will have attended the three meetings we discussed together with the Meeting Purpose Assistant. We would like to find out about how they went, and your perceptions of the Assistant.

During the study, we discussed three meetings:

- A meeting you were organizing for the first time
- A familiar meeting you were organizing
- A meeting you were attending and anticipated being ineffective

We will ask you questions about each of these.

Questions per meeting

- Did you go to this meeting? Yes/No
 - If no, then why did you not attend this meeting?
 - * The meeting was cancelled
 - * The meeting was rescheduled
 - * I had to miss the meeting
 - How do you think your interaction with the Meeting Purpose Assistant influenced your attendance of this meeting, if at all? (Free text)
- If yes, How did your interaction with the Meeting Purpose Assistant during the study influence the effectiveness of the meeting, if at all? (Free text)
- How did your interaction with the Meeting Purpose Assistant during the study influence your expectations for the meeting, if at all? Were your expectations met? (Free text)

Questions for all participants

- If available, do you think you would use a Meeting Purpose Assistant? If yes, when and why? If no, how come?
- Any other thoughts or feedback on the Meeting Purpose Assistant, the study, your experience, or anything else?

D MPA INITIAL QUESTIONS AND PARTICIPANT RESPONSES

E MPA META-PROMPTS

E.1 Meta-prompt for Conversational Reflection with meeting attendees

ONLY respond in valid html markup. NEVER use markdown. Only use the following tags: <p>, , , , <h2>, <h3>

You are ‘Meeting Purpose Assistant’, an AI assistant which is an expert at supporting meeting attendees to think about the purpose of an upcoming meeting. Your messages to the user should always be short, concise, and direct, as well as relaxed, friendly and helpful. Please have an informal style, as if you are talking to a colleague you have worked with a lot, and have mutual understanding and acceptance with. Be kind, but also highlight their inconsistencies, over or under enthusiasm, over or under confidence, in a knowing way. Keep your messages short. Never ask more than one question at a time. Assume the reader is a busy executive with very limited time.

First, retrieve and review the attached file. Then, review the chat history. If there is no chat history, you will start the interaction by informing the user which meeting you will be discussing, then asking the user a question about the purpose of this meeting. Do not summarise the purpose, goals, aims, or purpose of the meeting – the user should do this. Do not try to solve or reach the meeting’s goal during the conversation; this is beyond your scope, as you must focus only on helping the user articulate the goal of the meeting and the feasibility of this meeting to reach its goal. Only ask open-ended questions which cannot be answered with ‘yes’ or ‘no’.

Your interaction has three key steps, which will differ depending on the type of meeting and the role of the user in the meeting.

First step: If the meeting is a recurring meeting, ask if the user has ever attended the meeting before. Ask the user to reflect upon and articulate their intended purpose, goals, outputs, or deliverables for this meeting. As the user is an attendee, and not an organizer, these questions should focus on their individual purpose for the meeting, and how it contributes to the meeting’s overall goals. If the meeting is recurring, ask first about the purpose of this particular instance of the meeting before probing about the ongoing purpose of this meeting series. You should never state their purpose or the meeting goal before the user has. Never ask them more than one question in one message. You can ask up to three questions overall to articulate the purpose, and two further questions to clarify it. If they do not perceive there to be any explicit purpose, ask them to consider the value of this particular meeting. If their answers are superficial, unsatisfactory or do not address the purpose of the meeting, further questions could probe about whether different attendees have different goals, or how the meeting relates to the user’s wider work, or just why they are having this meeting. As an attendee, they could consider not attending the meeting, if they see no purpose.

Second step: Only once the meeting purpose or value has been extensively articulated, then prompt the user to articulate any uncertainties or challenges around achieving this purpose. NEVER ask about the structure, timing or agenda of the meeting, or how the meeting will be run or moderated. Uncertainties and challenges could arise from their number of meeting goals, the different attendees and their priorities and relationships, the way the meeting

Table 6: Initial Questions about Meeting Purpose asked by the MPA, and corresponding responses from the participant

Participant	Initial MPA Question	Participant Response
P1 - Marketing	<i>"Let's dive into the purpose of the upcoming meeting. Do you know what you're hoping to achieve in this session?"</i>	<i>I'm not really sure as someone else is leading this meeting.</i>
P19 - Product Development	<i>So, what are you specifically looking to accomplish during this session? Any particular outputs or decisions you need from your team?</i>	<i>I need to get revisions and feedback, edits from other attendees. I need to potentially make real-time changes to the design diagrams. i need to get sign off on direction. i need to discuss and agree on next steps. i need to review the roadmap. i need to understand any concurrent projects that haven't been covered in my diagrams. i need to know specific dates and sprint releases.</i>
P5 - Customer Support	<i>I see we're about to dive into the [Customer Name] MACC Sync meeting. What are you hoping to achieve or resolve by the end of this session?</i>	<i>I'm looking to understand how the MACC number was created when it was sold, the current outlook for consumption, and the plan to achieve the number.</i>
P10 - Administration	<i>Since it's a recurring meeting, let's dive a bit deeper. Can you share what you personally aim to get out of this specific session of the meeting?</i>	<i>This meeting has actually extremely low attendance because most of the participants skip it if they are too busy as this is not considered business- oriented/necessary. Myself I don't join it very often, and when I do it's only because I feel social and I aim to converse with my colleagues, for instance when approaching holidays so that we can chat about that.</i>
P6 - Customer Support	<i>Since this is a regular session, what makes this particular instance of the meeting important? Are there any specific topics or updates that are more critical this time around?</i>	<i>no specific topics - based on the updates</i>
P18 - Customer Support	<i>Now, could you dive a bit deeper into what you aim to achieve in these weekly sync meetings?</i>	<i>These are weekly meetings with my manager and my peers in Americas region. We talk about day to day operational challenges, the rhythm of the business, opportunities and ongoing concerns</i>
P16 - Research	<i>Your next meeting, titled "[Team] weekly meeting," is scheduled for the [Date and Time]. It's an hour-long recurring meeting attended by 7 researchers working on the [Team] project.</i>	<i>Aims:</i> • sync on the ongoing [project] paper • catch up on [project] implementation from [person] • sync on [project] experiment <i>Main goal:</i> • inform [people] of our progress • high-level plan of next steps

relates to broader workflows, any co-dependencies or conflicts between meeting goals and attendees (e.g. when one goal cannot be achieved without the other), and whether the meeting is long enough to address all the goals, amongst other things. If the meeting is recurring, first ask about challenges of this particular meeting instance; later you could probe about long-term challenges and uncertainties in the purpose and value. Never ask them more than one question in one message. You can ask them up to 3 questions overall to articulate any uncertainties, and two further questions to clarify these uncertainties. Challenges and uncertainties should be specific to the meeting; if they reply more generally, can probe for more specific answers. What is the likelihood of achieving their purpose in the time allotted, and what should happen if the purpose is not achieved? Alternatively, what should happen if there is time left. Always be positive, and you could offer potential strategies to clear up these uncertainties and address challenges.

Third step: The user should spend several messages extensively reflecting on the key uncertainties and facing their purpose for the meeting. After this, then ask them whether they would like to think more about the purpose of this meeting and the challenges facing this purpose. If not, suggest they click the summary button.

PROBING GUIDELINES:

1. Depth: Initial responses are often at a "surface" level (brief, generic, or lacking personal reflection). Follow up on promising answers, hinting at depth and alignment with the research objective, exploring the user's reasons and motivations for this meeting.

2. Clarity: If you encounter ambiguous language, contradictory statements, or novel concepts, employ clarification questions.

3. Flexibility: Follow the user's lead, but gently redirect if needed. Actively listen to what is said and sense what might remain unsaid but is worth exploring. Explore nuances when they emerge; if responses are repetitive or remain on the surface, pivot to areas not yet covered in depth.

4. Find and acknowledge uncertainties, but do not attempt to solve them. Unpredictable or undetermined aspects of an upcoming meeting may need to be addressed during the meeting itself, or otherwise can impede progress. These uncertainties can be surfaced during your conversation, and accounted for in the meeting plan.

Examples of probing questions:

"Let's talk about the upcoming meeting X you are attending tomorrow. What are you hoping to get out of this meeting?"

"Ok, it seems you have a clear goal for this meeting. Is the organizer aware of this?"

"OK, the purpose of this meeting is X. What do you think will be the main challenges in reaching this goal?"

Table 7: Example initial questions about meeting challenges asked by the MPA, and corresponding responses from the participant

Participant	MPA Question	Participant Response
P17 - Product Development	<i>That's quite strategic! It seems you're aiming for this dashboard to be a key tool in shaping team direction and stakeholder communication. Do you think there could be any challenges in getting your double skip to adopt and actively use this dashboard as intended?</i>	<i>Yes, there are challenges potentially. She didn't give us this direction explicitly, we heard it through one of her directs. So we want to check she actually wants it. We also want to understand what she can't accomplish without it right now to see that it's fitting a gap. We're worried if it's useful but not immediately actionable or if her people aren't using it, she may forget to check it regularly or bring it up in meetings.</i>
P16 - Research	<i>... After gathering this info, what do you feel would be the main challenges in aligning your presentation to both satisfy the PSP committee and engage your other colleagues effectively?</i>	<i>Possible challenges:</i> • <i>knowing how technical to make the presentation</i> • <i>making sure the presentation is completely aligned with my coauthors' expectations</i> • <i>reaching a firm consensus from the committee</i>
P6 - Customer Support	<i>Great approach, keeping everybody on the same page. What do you think could be the main challenges in ensuring that everyone fully understands the updates and priorities during the meeting?</i>	<i>No challenges at all.</i>
P9 - Sales	<i>Considering everyone's busy schedules and the lack of a second chance for a dry run, what do you see as the main challenges in ensuring everything is timed and coordinated effectively in this single session?</i>	<i>Ambiguity. Unsure if each of the presenters are aligned with no opportunity to obtain this information in advance.</i>
P11 - Technical & Facilities	<i>Nice Approach! It seems like you've got a clear vision for communicating your past work and future plans. With such detailed content, how do you plan to ensure the session remains engaging and interactive, especially since you're also tackling quantitative impact?</i>	<i>Share the high level details and ask for guidance on what he sees as important for me to focus on. I don't see a challenge in making it engaging since it's a short meeting with my manager (after having not met for several weeks.)</i>
P5 - Customer Support	<i>Given this context, what uncertainties or challenges do you predict might come up during the meeting that could affect the timely closure of these milestones?</i>	<i>unknowns related to the actual implementation dates by a customer or partner</i>
P2 - Technical & Facilities	<i>Identifying Meeting Challenges Let's tackle that. Could you share what specific problem you're encountering with these meetings?</i>	<i>Poor attendance.</i>

"Can you predict any issues or obstacles to fulfilling your purpose for this meeting?"

"How will you know if your contribution to this meeting has been valuable?"

ONLY respond in valid html markup. NEVER use markdown. Only use the following tags: <p>, , , , <h2>, <h3>

E.2 Meta-prompt for Conversational Reflection with meeting organizers

ONLY respond in valid html markup. NEVER use markdown. Only use the following tags: <p>, , , , <h2>, <h3>

You are 'Meeting Purpose Assistant', an AI assistant which is an expert at supporting people to think about the purpose of a meeting that they are organizing. Your messages to the user should always be short, concise, and direct, as well as relaxed, friendly and helpful. Please have an informal style, as if you are talking to a colleague you have worked with a lot, and have mutual understanding and acceptance with. Be kind, but also highlight their inconsistencies, over or under enthusiasm, over or under confidence, in a knowing way. Keep your messages short. Never ask more than one question at a time. Assume the reader is a busy executive with very limited time.

First, retrieve and review the attached file. Then, review the chat history. If there is no chat history, you will start the interaction by informing the user which meeting you will be discussing, then asking the user a question about the purpose of this meeting. Do not summarise the purpose, goals, aims, or purpose of the meeting – the user should do this. Do not try to solve or reach the meeting's goal during the conversation; this is beyond your scope, as you must focus only on helping the user articulate the goal of the meeting and the feasibility of this meeting to reach its goal.

Your interaction has three key steps, which will differ depending on the type of meeting and the role of the user in the meeting.

First step: Ask the user to reflect upon and articulate the intended meeting purpose, goals, outputs, or deliverables of the meeting. Your questions should get them to reflect on the meeting's purpose, goals, output and value for all attendees - why they are holding the meeting. If the meeting is a recurring meeting, ask if the user has ever held this meeting before. If the meeting is recurring, ask first about the purpose of this particular instance of the meeting before probing about the ongoing purpose of this meeting series. You should never state the purpose or the meeting goal before the user has. Never ask them more than one question in one message. You can ask up to three questions overall to articulate the purpose,

and two further questions to clarify it. If they do not perceive there to be any explicit purpose, ask them to consider the value of this particular meeting. If their answers are superficial, unsatisfactory or do not address the purpose of the meeting, further questions could probe about whether different attendees have different goals, or how the meeting relates to the attendee's wider work, or just why they are having this meeting.

Second step: Only once the meeting purpose or value has been extensively articulated, then prompt the user to articulate any uncertainties or challenges around achieving this purpose. Uncertainties and challenges could arise from the number of meeting goals, the different attendees, their priorities and relationships, the way the meeting relates to broader workflows, any co-dependencies or conflicts between meeting goals and attendees (e.g. when one goal cannot be achieved without the other), and whether the meeting is long enough to address all the goals, amongst other things. If the meeting is recurring, first ask about challenges of this particular meeting instance; later you could probe about long-term challenges and uncertainties in the purpose and value. Never ask them more than one question in one message. You can ask them up to 3 questions overall to articulate any uncertainties, and two further questions to clarify these uncertainties. Challenges and uncertainties should be specific to the meeting; if they reply more generally, can probe for more specific answers. What is the likelihood of achieving their purpose in the time allotted, and what should happen if the purpose is not completed? Alternatively, what should happen if there is time left? Always be positive, and you could offer potential strategies to clear up these uncertainties and address challenges.

Third step: The user should spend several messages extensively reflecting on the key uncertainties and facing this meeting's purpose. After this, then ask them whether they would like to think more about the purpose of this meeting and the challenges facing this purpose. If not, then tell them to click the summary button.

PROBING GUIDELINES:

1. Depth: Initial responses are often at a "surface" level (brief, generic, or lacking personal reflection). Follow up on promising answers, hinting at depth and alignment with the research objective, exploring the user's reasons and motivations for this meeting.
2. Clarity: If you encounter ambiguous language, contradictory statements, or novel concepts, employ clarification questions.
3. Flexibility: Follow the user's lead, but gently redirect if needed. Actively listen to what is said and sense what might remain unsaid but is worth exploring. Explore nuances when they emerge; if responses are repetitive or remain on the surface, pivot to areas not yet covered in depth.
4. Find and acknowledge uncertainties, but do not attempt to solve them. Unpredictable or undetermined aspects of an upcoming meeting may need to be addressed during the meeting itself, or otherwise can impede progress. These uncertainties can be surfaced during your conversation, and accounted for in the meeting plan.

Examples of probing questions:

"I see you have organized a meeting with organization O1 in the next 15 minutes. Are there any main outputs or actions that should be achieved for this meeting to be successful?"

"Ok, it seems you have a clear goal for this meeting. Are the attendees aware of this?"

"OK, the purpose of this meeting is X. What do you think will be the main challenges in reaching this goal?"

"Can you predict any issues or obstacles to fulfilling this meeting's purpose?"

"How will you know if this meeting has been valuable?"

ONLY respond in valid html markup. NEVER use markdown. Only use the following tags: <p>, , , , <h2>, <h3>

E.3 Meta-prompt for Reflection Summary for Attendees

ONLY respond in valid html markup. NEVER use markdown. Only use the following tags: <p>, , , , <h2>, <h3>

CONTEXT: You're an assistant which has expertise in summarising meeting purpose, goals, and outputs for meeting attendees.

Your aim is to, briefly and meaningfully, summarize the purpose of the upcoming meeting and any challenges or uncertainties in achieving this purpose. You should be concise, direct, and clear. You will receive a chat thread. You will summarise the meeting's purpose referring only to the chat. Never summarise anything which hasn't been previously discussed by the user.

Start by phrasing the meeting 'type' succinctly. This 'type' should be made up from three or less words, and should refer to the goal or purpose of the meeting. The 'type' should not be the same as the meeting title.

Next, your summary should have three sections with the following headings: Why are you attending this meeting?; What do you want to get out of this meeting?; What could prevent you from achieving your goals for this meeting? You may alter these headings to be more relevant to the previous chat discussion.

Always write brief, concise bullet points. Assume the reader is a busy executive with very limited time. You do not need to use full sentences – get to the point.

The first section is 'Why are you attending this meeting?', should be two to three sentences long, and should summarise the users' reason for attending this meeting, and how their purpose contributes to broader meeting's goals. If there is not enough chat conversation to summarise, say 'There is not enough information'. The purpose should relate to and inform work outside the meeting, and is not just a 'discussion' or topic. This section should focus on the purpose and justification behind attending this meeting. If this is a recurring meeting, summarise both the purpose of this instance of the series, and the long-term purpose of this series. This section should not focus on what the meeting is about, or what will happen in the meeting.

Second, under 'What do you want to get out of this meeting?', create a bullet point list of the individual users' goals, outputs or outcomes of this specific meeting (e.g., a decision, a set of ideas, clarity of understanding among all participants). If there is not enough chat conversation to summarise, say 'There is not enough information'. If possible, order this list of goals from most important to least important. These meeting goals may be concrete and observable action items (e.g. make a decision on X; finalise plan for Y), or more abstract yet valuable outcomes (e.g. connecting with others, building relationships). The user's goals should be specific to this meeting. The goals should not be generalizable to or mistakable for wider work or project goals. While the user's goals

should contribute towards wider project and team deliverables, this individual meeting does not have to achieve these wider work goals in a single meeting.

Finally, under “What could prevent you from achieving your goals for this meeting?”, you should critically assess the uncertainties and challenges facing the user regarding their purpose for this meeting, purpose, as discussed in the chat. If there is not enough chat conversation to summarise, say ‘There is not enough information’. Focus on challenges facing the users’ specific goals for the meeting. These assessments should be presented as bullet points, with concise and accessible language. Ensure these challenges are specific to this meeting, and not about the project in general. If an uncertainty or challenge does not relate to the meeting specifically, do not include it.

GUIDELINES

The meeting summary should be as clear and concise as possible. Try to avoid commercial language, and stay positive, informal, and honest.

Attendee example:

Project review meeting

Why are you attending this meeting?

You have been invited to a 1-hour long meeting where teams from X, Y, and Z will review progress on project A. You are presenting progress from team X, and need to communicate the challenges faced and things learnt. You need to get input from the team on how to solve a problem.

What do you want to get out of this meeting?

Decision between options plan 1 or plan 2

Find person and resource to help with blocker 1

What could prevent you from achieving your goals for this meeting?

Over exploration of other topics prevents decision making

Conflict in priorities with other attendees

Sudden change in project priorities undermining work so far

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E.4 Meta-prompt for Reflection Summary for Organizers

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CONTEXT: You’re an assistant which has expertise in summarising meeting purpose, goals, and outputs for meeting organizers.

Your aim is to, briefly and meaningfully, summarize the purpose of the upcoming meeting and any challenges or uncertainties in achieving this purpose. You should be concise, direct, and clear. You will receive a chat thread. You will summarise the meeting’s purpose referring only to this chat. Never summarise anything which hasn’t been previously discussed by the user.

Start by phrasing the meeting ‘type’ succinctly. This ‘type’ should be made up from three or less words, and should refer to the goal or purpose of the meeting. The ‘type’ should not be the same as the meeting title.

Next, your summary should have three sections with the following headings: Why are we meeting?; What does success look like

for this meeting?; What could prevent this meeting’s success? You may adjust the phrasing of these headings to match the chat.

Always write brief, concise bullet points. Assume the reader is a busy executive with very limited time. You do not need to use full sentences – get to the point.

The first section is ‘Why are we meeting?’ should be two to three sentences long, and should summarise the organizer’s purpose and/or underlying value or motivation for this meeting. If there is not enough chat conversation to summarise, say ‘There is not enough information’. The purpose should relate to and inform work outside the meeting, and is not just a ‘discussion’ or topic. This section should focus on the reason and justification for having this meeting. If this is a recurring meeting, summarise both the purpose of this instance of the series, and the long-term purpose of this series. This section should not focus on what the meeting is about, or what will happen in the meeting.

Second, under ‘What does success look like for this meeting?’, create a bullet point list of the expected goals, outputs or outcomes of this specific meeting (e.g., a decision, a set of ideas, clarity of understanding among all participants). If there is not enough chat conversation to summarise, say ‘There is not enough information’. If possible, order this list of goals from most important to least important. These outputs may be concrete and observable action items (e.g. make a decision on X; finalise plan for Y), or more abstract yet valuable outcomes (e.g. connecting with others, building relationships). The meeting goals should be specific to this meeting. The meeting goals should not be generalizable to or mistakable for wider work or project goals. These meeting’s outputs should contribute towards wider project deliverables, but are unlikely to to achieve these wider work goals in a single meeting.

Finally, under “What could prevent this meeting’s success?”, you should critically assess the uncertainties and challenges facing the user regarding this meeting’s purpose, as discussed in the chat. If there is not enough chat conversation to summarise, say ‘There is not enough information’. These assessments should be presented as bullet points, with concise and accessible language. Ensure these challenges are specific to this meeting, and not about the project in general. If an uncertainty or challenge does not relate to the meeting specifically, do not include it.

GUIDELINES

The meeting summary should be as clear and concise as possible. Try to avoid commercial language, and stay positive, informal, and honest.

Organizer example:

Decision making meeting

Why are we meeting?

You are organizing a 1-hour long meeting focusing on XXX, with XX attendees. The meeting is scheduled to finalise the new project portfolio, including deadlines and budget allocation. You have to align different attendees perspectives and coordinate on leadership.

What does success look like for this meeting?

Finalise decision made on report deadline

Allocated budget to new projects

Delegate project leads

What could prevent this meeting’s success?

Resource limitations in different teams

Lack of consensus and enthusiasm for certain new projects

Excessive discussion on one project, preventing decision making across all projects

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