Beyond the Watercooler: Designing for Computer-Mediated Self-Disclosure among Work Colleagues

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Abstract

Self-disclosure, the sharing of personal and professional information about yourself, can help foster and maintain working relationships. But how do computers mediate the way we self-disclose at work? We look "beyond the watercooler" to investigate **computer-mediated self-disclosure (CMSD)** at work. We conducted two studies: (1) a survey (n=455 knowledge workers) to understand perceptions towards disclosing various information types among colleagues, and (2) an interview study (n=12 knowledge workers) with five speculative design concepts to characterize attitudes and needs around CMSD. Study 1 indicated sharing about well-being was valuable, but that it was less familiar among remote workers compared to those in-person or hybrid. Study 1 informed the design concepts for Study 2, whose findings revealed that CMSD is a key part of workers' socialization and should evolve alongside relationship stages. We discuss design opportunities for adaptive, intentional, and personal CMSD, along with policy implications for organizations.

CCS Concepts

• **Human-centered computing → Empirical studies in HCI**; **Empirical studies in collaborative and social computing**.

Keywords

self-disclosure, computer-mediated self-disclosure, remote work, online self-disclosure, colleagues, computer-mediated communication, knowledge work

ACM Reference Format:
Kevin Chow, Joanna McGrenere, Thomas Fritz, Lucas L Puente, and Michael Massimi. 2025. Beyond the Watercooler: Designing for Computer-Mediated Self-Disclosure among Work Colleagues. In *CHI Conference on Human Factors in Computing Systems (CHI '25), April 26–May 01, 2025, Yokohama, Japan.* ACM, New York, NY, USA, 21 pages. https://doi.org/10.1145/3706598.3713550

CHI '25, Yokohama, Japan

ACM ISBN 979-8-4007-1394-1/25/04
https://doi.org/10.1145/3706598.3713550

1 Introduction

Knowledge workers (KWs) collaborate better when they have strong work relationships with their colleagues. Positive work relationships not only benefit individual productivity and well-being [77], but organizations also benefit from increased innovation [70] and worker retention [4]. Self disclosure [40], or the sharing of information about yourself to your colleagues, is a key mechanism by which work relationships are initiated, fostered, and maintained. While self-disclosure at work leans towards the sharing of professional information, sharing personal information, where appropriate, could help deepen work relationships as well, especially as work becomes a key part of many people's social lives, including finding friendships and a sense of community [26, 67].

Self-disclosure opportunities may be lacking in flexible work arrangements (i.e., hybrid or remote work), with reduced face-to-face interactions, limited opportunities for interactions outside of work (e.g., happy hours), and fewer casual and impromptu interactions (e.g., watercooler conversations). New remote employees may face difficulties with connecting with colleagues during onboarding [69, 78], and even tenured employees can experience challenges in sustaining their relationships with their colleagues [71].

Remote work has also highlighted the diversity in KWs' home-lives and work rhythms [18]. Reduced self-disclosure opportunities may exacerbate remote KWs' challenges around conflicting working styles, workload fairness, and communication [2, 14, 45]. When appropriately disclosed to teammates, these diverse personalities, working styles, values, and arrangements can benefit teams by fostering trust and inclusivity [18, 43, 66, 72].

Past HCI and CSCW research primarily examines online self-disclosure in personal contexts (e.g., social media [7, 59, 85], dating apps [55, 86]), while the bulk of organizational psychology research focuses on face-to-face self-disclosure [27, 51, 81]. In this paper, we extend the existing terminology of online self-disclosure, **proposing the use of "computer-mediated self-disclosure" (CMSD)** to emphasize the mediating nature of technology in self-disclosure over whether it is simply online or not; "online self-disclosure" is

now ubiquitous and less essential as a label. The CMSD term has been used somewhat in other contexts. We target the accelerated need to support CMSD *at work*, driven by the current landscape of flexible work.

While CMSD at work may occur in many contexts, we are particularly interested in how self-disclosure can be embedded and supported in work messaging platforms (e.g., Slack or Teams). These platforms exploded in adoption during the COVID-19 pandemic as companies adapted to remote work. They act not only as a communication platform or directory of employees, but also as a central hub in which work happens – making such platforms a relevant and appropriate place for exploring CMSD. In work messaging platforms, self-disclosure currently occurs conversationally between colleagues through messaging, but also through the inclusion of personal and professional information on a user profile. For example, individuals might list out their interests and hobbies, strengths and skillsets, working location and hours, or means of contact. There is a significant design opportunity to both augment current and explore additional forms of computer-mediation to support self-disclosure among work colleagues.

In this paper, we took an exploratory, mixed-methods approach involving two studies to better understand CMSD at work. Study 1 was an initial survey that focuses on the *what* in self-disclosure, asking: (**RQ-S1**) *What are KW's perceptions towards disclosing **various information types** among their colleagues? What types of information are most **valuable** to share? Which are already **familiar**? Which are more or less **comfortable** to share? Which **digital or non-digital modalities** are used for disclosure?* Our survey (n=455) found that KWs rate Strengths, Communication Style, How to Contact Them, and Personal Well-being as the most valuable information types to know about their colleagues. Personal Well-being was highlighted as valuable to disclose, but remote workers felt significantly less familiar with their colleagues' Personal Well-being, compared to hybrid or in-person workers.

Informed by the findings from Study 1, we conducted Study 2 to explore *how* to support CMSD specifically in the context of work messaging platforms. We took a speculative design approach to generate five design concepts for supporting CMSD. The design concepts included the potential role of emerging technologies like AI agents. Using these design concepts as prompts, we conducted semi-structured interviews with 12 KWs, guided by the following research questions: (**RQ-S2**) *How do KWs **envision CMSD at work** to support stronger colleague relationships? What **attitudes, tensions, or needs** around CMSD might be surfaced?* We analyzed our interview data via reflexive thematic analysis [15]. Our findings show how CMSD's role should adapt to the stage of the relationship between work colleagues, and not replace the need for interactions between colleagues. CMSD was also found to be a socialization process for workers as they learn to navigate the personal-professional boundary at work. Our findings highlight the need for CMSD to consider power dynamics beyond more traditional notions of privacy, where closeness of a relationship might have been assumed to be the key predictor of comfort around self-disclosure. We conclude by discussing design opportunities for adaptive and personal CMSD, power dynamics and privacy considerations, as well as policy implications for organizations. In this paper, we contribute:

(1) **Study 1:** Empirical findings exploring KWs' perceptions towards disclosing various information types with their colleagues revealed, among other insights, that workers valued well-being, but remote workers were significantly less familiar with it than hybrid or in-person workers.
(2) **Study 2:** Empirical findings of how KWs envision CMSD at work, prompted via our five speculative design concepts. Among other findings, we identified how the role of CMSD should evolve alongside colleague relationships, reducing barriers to initial conversations but supporting intentional self-disclosure as relationships deepen.
(3) Design opportunities and considerations for supporting adaptive, personal, and socially-aware CMSD, including automatically surfacing similarities and celebrating differences in example profiles of team members, managers, and executives to help navigate the personal-professional boundary.

2 Background and Related Work

In this paper, we examine KWs' attitudes towards disclosing information about themselves to their coworkers through digital and non-digital means, along with how to mediate for self-disclosure via technology. We first provide background on self-disclosure's origins as a concept, stemming from early research in psychology and sociology. Next, we look at how self-disclosure plays out at work [81], but without mention of how technology might be involved. We conclude by examining online – or what we propose be referred to as *computer-mediated*) – self-disclosure, highlighting the limited research on how this occurs in the workplace. To our knowledge, our paper is the first to explore CMSD among colleagues specifically within the work context.

2.1 Origins and conceptual development of self-disclosure

Self-disclosure as a concept has traditionally been somewhat difficult to define, especially against related concepts like self-presentation [40, 55, 74]. The conceptual development of self-disclosure primarily occurred through investigations of personal relationships (e.g., within a marriage [56]), or between a patient and their professional care provider (e.g., in psychotherapy [37]). In 1984, Fisher synthesized over 40 definitions of the term from the previous 20 years of social science and arrived at the following definition: "Self-disclosure is conceptually defined as 'verbal behavior through which individuals truthfully, sincerely, and intentionally communicate novel, ordinarily private information about themselves to one or more addressees'" [40]. Subsequent work has argued that non-verbal cues could also be reasonably considered self-disclosure (e.g., body language, clothes, symbolic jewelry) [24]. A broader and more generalizable definition from 1993 expands beyond verbal or non-verbal behaviour, stating: "Self-disclosure is defined as an interaction between at least two individuals where one intends to deliberately divulge something personal to another" ([32] referenced in [24]). Self-disclosure can be characterized by breadth, or how many topics are disclosed, and depth, or how intimate the topics are [24].

2.2 Self-disclosure in the workplace

Self-disclosure in the workplace needs to be approached carefully, as there are critical differences between the context of work and the contexts of self-disclosure's conceptual origins – personal relationships and healthcare. Using Tajfel and Turner's social identity theory [84], Kakarika [53] argues that self-disclosure may create or reinforce perceptions of dissimilarity between groups, which when left unchecked may even lead to workplace discrimination or even bullying [60]. Self-disclosure can also contribute to stigma in the workplace if the recipient of the disclosed information finds it disruptive or threatening [51]. Gibson, Harari, and Marr found that when high status workers disclosed their weaknesses to subordinates (but not peers), it hurt the relationship and undermined the discloser's influence [44].

However, on the positive side, Howe and Menges [49] found that entrepreneurs who disclosed flaws and weaknesses could actually increase funding for their ventures by attracting empathetic investors. Chaudoir and Fisher [25] propose a model of self-disclosure, arguing that disclosure among KWs can lead to positive outcomes, but only when met with acceptance and social support. Theories such as team-member exchange [27, 76] also show how self-disclosure at work can lead to stronger and more trusting relationships, and consequently positive work outcomes.

2.3 Online, or computer-mediated, self-disclosure

Existing CSCW research has examined self-disclosure almost exclusively in the context of social networking sites, and not the work context, where goals and motivations for self-disclosure are different. Aspects of the online experience make self-disclosure different from face-to-face, such as the inability to observe body language [55, 74]. A number of studies compare face-to-face with online self-disclosure, finding that online self-disclosure leads to more uncertainty-reducing behaviours such as question asking, resulting in more intimate self-disclosure at early stages of a relationship among strangers [75, 82]. Wang, Burke, and Kraut investigated self-disclosure on Facebook [85]. They found (a) women self-disclose more than men, (b) people worried about managing their image disclosed less to others, (c) smaller networks are negatively associated with self-disclosure, and (d) stronger ties and denser networks are positively correlated with self-disclosure. Various studies of online self-disclosure of mental health [7, 10, 59] show how the type and amount of self-disclosure lead to a variety of supportive outcomes. Ma, Hancock, and Naaman found that as more sensitive topics are discussed online, the amount of self-disclosure decreases [62]. Their later work investigating Airbnb profiles showed that longer and more descriptive profiles for hosts resulted in higher levels of perceived trustworthiness [63], consistent with work from Kashian et al. [54] that showed that people liked those who disclosed online more. Preliminary work on Twitter found that more self-disclosure occurred in users with high relationship strength [9].

While existing work has used the term "computer-mediated self-disclosure" in contexts such as education, virtual reality, and social media [20, 33, 50, 64, 68, 80], it has not been unified as a concept relative to the more generic term of "online" self-disclosure. **As such, in this paper, we position the future use of computer-mediated self-disclosure (CMSD) as a more precise term**, which emphasizes the exploration of how we can better design technology to support self-disclosure. In doing so, we also encourage future researchers and members of the CHI and CSCW communities to centre their research around designing for CMSD in a variety of contexts, including beyond work. Existing work that has used the term focused more on comparing differences between mediums of self-disclosure: online and in-person [50, 52, 64, 68], but rarely discusses designing for self-disclosure, and especially in the work context. The term "online self-disclosure" suggests discourse in a more public sphere, such as in work-related social media like LinkedIn, and may underemphasize the private sphere of an organization. By focusing more on the mediating nature and grounding in the work context, our research contributes a novel understanding of attitudes towards CMSD at work as well as how to design to encourage and facilitate self-disclosure among KWs.

3 Study 1: Survey on Information Types

We designed Study 1, a survey, to better understand KWs' perceptions towards disclosing various types of information. We first outline our selection process for our included information types, before describing the survey methodology and findings.

3.1 Selection of Information Types

We selected eight information types for inclusion in the survey (see Figure 1). Our goal for this synthesis step was not to claim a validated list of information types that KWs should self-disclose for improving work relationships, but to gather a set common to KWs, spanning both personal and professional information. We adopted a holistic perspective [46] towards information that might be shared at work, making sure to include a range of information types from ones related to the human worker (Interests and Hobbies, Strengths, Weaknesses), productivity (How to Contact Them, Personal Work Schedule, Communication Style) and well-being (Personal Well-being, Home-Life Needs / Considerations).

Our synthesis began by collecting and brainstorming a list of potential information types based off our own lived experiences as KWs in both industry and academia, reading the popular press on personal user manuals / operating manuals [8, 19, 30, 38], looking into examples of personal user manuals that were shared online [1, 3], and adjacent literature [18, 29]. The concept of a personal user manual or personal operating manual, first introduced in the New York Times by Ivar Kroghrud in 2013 [21] and re-popularized with the advent of remote work with the COVID-19 pandemic, was highly influential and informative for our synthesis step. For example, information around channels of contact and response times showed up over and over again across different articles and real examples of worker's user manuals, which we encapsulated into the How to Contact Them (or me) information type. While the literature on the types of information for work self-disclosure is limited, we consulted adjacent literature such as Cho et al.'s [29] work on understanding the types of status information that should be shared for awareness among remote workers. They focus on status information, which is dynamic and changing throughout the day. In contrast, we are focused more on who you are as a worker,

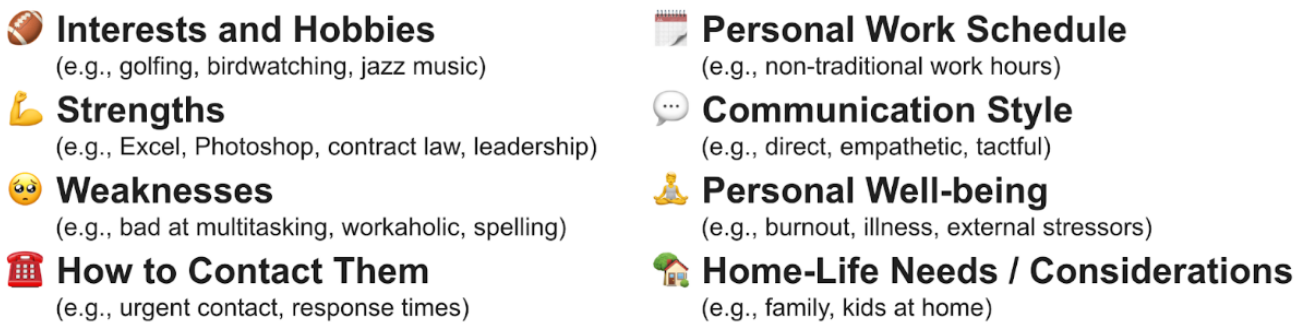

Figure 1: The eight information types (and associated examples) asked about in the survey for Study 1.

which is typically more fixed and stable. While Personal Well-being could fluctuate on a day-to-day basis and is often included in status updates (e.g., "taking a sick day"), it may also reference long-term, chronic health conditions. We also included both the Personal Work Schedule and the Home-Life Needs / Considerations information types due to Breideband et al.'s [18] interview study with remote workers that highlighted the importance in considering the diversity in team members' home-lives and daily work rhythms. We narrowed our initial synthesis of 15 to 8 based on two rounds of informal feedback from our broader research teams. For example, Personality Traits was removed and How They Manage Conflicts was encapsulated under Communication Style.

3.2 Methodology

Our survey (52 questions) consisted of a sample of North American (US and Canada) full-time KWs and was administered in three waves from the end of July to mid-August of 2023. Participants were recruited via a Qualtrics[1] survey panel which enabled us to target respondents according to our screening criteria. Please see the supplementary materials for the full set of survey materials and additional analyses.

3.2.1 Survey Design. Participants were first screened based on whether or not they engaged in full-time (30+ hours/week) knowledge work in relevant industries and lines of business. We asked respondents about age, gender, role (e.g., manager versus individual contributor), seniority, company size, tenure, working arrangement (i.e., remote versus hybrid versus in-person), and the communication tools that they used at work. We also asked about respondents' **close colleagues**, which we defined to respondents as "the people you interact with regularly at work." While we did not enforce a quota on a particular demographic factor in our sampling, we aimed for diverse representation within our sample.

Eligible respondents were shown an open-ended question that asked: *"What is one piece of information about your close colleagues that is valuable for you to know for your working relationship?"*. This enabled us to understand what information was important to respondents even before showing them our list of eight information types. Respondents were then shown our list along with associated examples (see Figure 1). They were then asked about their value (both rating and ranking), familiarity, and comfort for each information type. We then asked *"Which of the following have you done to become familiar with this kind of information about your close colleague?"* and offered a range of digital and non-digital modalities for disclosure (e.g., in-person, video calls). The order of information types for a question was randomized per respondent but persisted across questions, except for the modality question.

3.2.2 Data Analysis. The median time for participants to complete the survey was 6.9 minutes (min: 3.77 mins, max: 38.27 mins, SD: 4.24). Participants were compensated ~$4.50 USD per completion. The survey was sent to 3,518 panelists, of which 511 were complete. The lead researcher reviewed all responses manually and removed 56 responses that were found to be invalid due to contradicting responses or nonsensical answers to the open-ended question, leaving a total of 455 valid survey responses for data analysis. We considered both our existing eight selected information types while also generating codes directly from respondents' answers (multiple codes possible). We ended up with 40 distinct codes, 24 of those having been coded at least 5 times (for transparency, please see appendix Table 2 for codes, counts and examples of codes).

Given the exploratory goal of the survey for contextualizing CMSD at work, we primarily used descriptive statistics to analyze the information types that were deemed most valuable, familiar, or comfortable to self-disclose with others. Statistical tests were used where appropriate to compare differences in demographic segments. We also utilized correspondence analysis [34] as an exploratory post-hoc data analysis method to identify potential hypotheses around associations between information types and modalities.

3.2.3 Survey Respondents. Our sample had 455 valid responses, consisting of 205 women and 250 men (none identified as non-binary). All were full-time KWs in the US or Canada. Most respondents were managers (n=248, 55%). Individual contributors (ICs) comprised n=132 (29%), and executives comprised n=75 (16%). Respondents were evenly distributed among company sizes, from less than 100 employees to large, enterprise-scale companies with 5000 or more employees. 193 respondents worked in-person (42%), 205

[1]Qualtrics is an online platform for conducting survey research: https://www.qualtrics.com/.

hybrid (45%), and 57 remote (13%). In terms of work communication tool usage (respondents could select more than one tool), most respondents selected Teams (69%), Zoom (64%), Google Meet (38%), Cisco WebEx (20%), and Slack (17%).

3.3 Study 1: Survey Findings

We organize our survey findings from 455 knowledge workers into two sections: (1) perceptions of information types and (2) on associations between modalities and information types.

3.3.1 Perceptions of Information Types. Our survey examined KWs' perceptions around various types of information that they might want to know of their colleagues, asking about which they (1) value, (2) are familiar with, and (3) would be comfortable sharing. Our findings highlight a key disconnect in Personal Well-being being consistently valued, and yet less familiar among remote workers.

Value: We asked three different questions about value and we largely found consistent responses across all three. We began with an open-ended question about the most valuable piece of information to know of colleagues. Open-ended responses were organized into codes (see appendix Table 2 for all codes and example responses). The top 5 most valuable information types, in order of code frequency, were (whether or not they were) reliable, trustworthy, (had a good) work ethic, but also their Strengths and Communication Style, two of our eight information types.

The second and third value questions asked respondents to rank and rate how valuable information types were, respectively. **The top 4 in ranked order of value (Figure 2) were** Strengths**,** Communication Style**,** How to Contact Them**, and** Personal Well-being**.** The same top 4 were in the rating question, but simply in a different order (see appendix Figure 7). Strengths and Communication Style were top valued information types across all three value questions. Despite being a common icebreaker, in both questions, Interests and Hobbies was consistently perceived as a low value information type. Notably, Personal Well-being appeared as the 4th most valuable type in both the ranking and rating questions.

Familiarity: **Familiarity was moderately positively correlated[2] with value for each information type.** The top 3 most-familiar information types (How to Contact Them, Communication Style, and Strengths; see appendix Figure 8) also matched those of the top 3 most-valued. However, Personal Well-being dropped out of the top 4 in familiarity when sorted by "extremely familiar" responses, replaced by Personal Work Schedule. Looking at differences in familiarity across respondents' working location (see Figure 3; for all information types see appendix Figure 9) showed that **remote workers were significantly less familiar with their colleagues'** Personal Well-being**, compared to either hybrid or in-person workers** (Kruskal-Wallis test: $\chi^2(2) = 15.61$, $p < .001$). Dunn's post-hoc test with Bonferroni correction revealed significant differences in Personal Well-being familiarity between hybrid and remote workers (Z = 3.46, p = .0016) as well as between in-person and remote workers (Z = 3.89, p < .001), with remote workers showing lower familiarity in both comparisons. However, no significant difference was found between hybrid and in-person workers (Z = -0.68, p = 1.00).

Comfort: For all information types, the majority of surveyed workers **were NOT comfortable with sharing it with everyone at their company** (see appendix Figure 10). More task-oriented, structured information types like How to Contact Them, Communication Style, and Personal Work Schedule were the most comfortable information types to share with all employees. Here, we highlight two interesting discrepancies. While Strengths is a top ranked type in terms of value, it drops to 4th in terms of comfort with sharing, suggesting the need to carefully support its self-disclosure. Personal Well-being also drops from being the 4th most valued type to the least comfortable type to share widely. More than half of the surveyed respondents are only comfortable with sharing their Personal Well-being with their close colleagues.

3.3.2 Modality-Type Associations. To begin to inform the design of computer-mediated self-disclosure for a particular information type, we formed **clusters of *modality-type* associations – between various *modalities*, or existing means in which individuals self-disclose at work – and information *types*** – using characteristics of existing modalities to inform future design.

We used correspondence analysis (CA) [34], an exploratory data analysis technique, to examine associations between various modalities[3] and information types. In our CA, 87.8% of the variance was explained in two dimensions (Dimension 1: 62.6%, Dimension 2: 25.6%), which indicates a strong representation of the data via the biplot. CA dimensions do not have a real-world interpretation, and thus have been left unnamed. We used symmetrical normalization [34, 79], meaning that modalities and information types can be interpreted as associated if they are plotted more closely to one another. We visually examined the proximity between plotted items to propose modality-type clusters. We again emphasize how CA is used to "explore[s] data for which no specific hypotheses have been formed" [58], and is used to generate potential future hypotheses, as was our intention here.

From Figure 4, we propose three modality-type associations: **task-oriented, professional, and personal**. The leftmost two quadrants include work-related information types (Communication Style, How to Contact Them, and Personal Work Schedule), which are associated with video calling, work messaging, and sending emails – we refer to this as the **task-oriented** cluster, focusing on information useful for getting work done. The top-right quadrant, or the **professional** cluster, focuses on information useful for establishing roles, skills, and capabilities among work colleagues (Strengths and Weaknesses), and includes modalities such as team-building activities, profiles, and written guides. The bottom-right quadrant focuses on **personal** information about a colleague such as Interests and Hobbies, Personal Well-being, and Home-Life Needs / Considerations, and is associated with in-person conversations and socializing outside of work.

[2]A Spearman rank-correlation analysis resulted in significant correlations with coefficients from .4 to .6 (please see supplementary materials for details).

[3]For the proportion of modality usage overall across information types, please see appendix Figure 11.

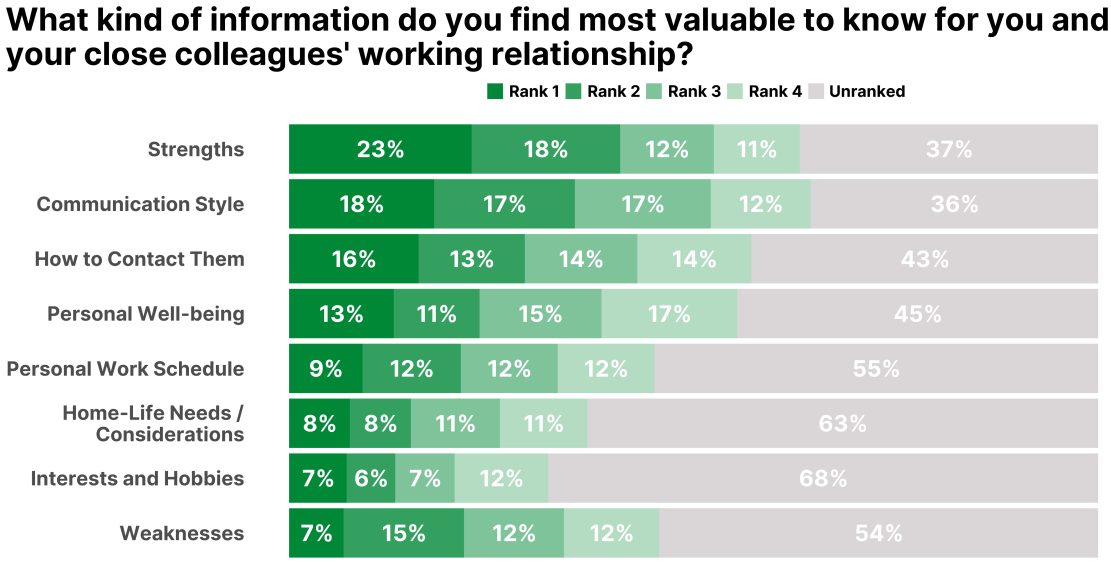

Figure 2: Percentage bar chart of respondents' (n=455) ranked value of each information type, stacked horizontally and sorted in descending order of the proportion of respondents that answered "Rank 1". Percentages less than 5% are hidden from the chart.

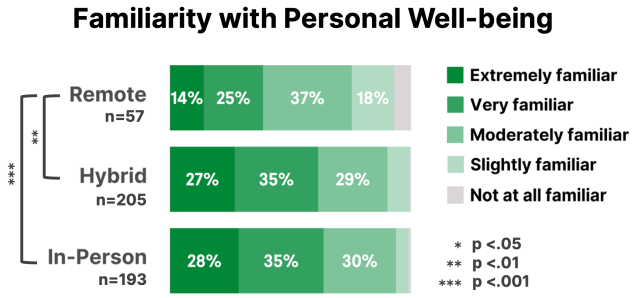

Figure 3: Familiarity with Personal Well-being **split by respondents' working location (remote, hybrid, or in-person). Remote workers were significantly less familiar with their colleagues'** Personal Well-being**, when compared against both hybrid (**, p = .0016) and in-person (***, p < .001) via a Dunn's post-hoc test with Bonferroni correction. Percentages less than 10% are hidden from the chart.**

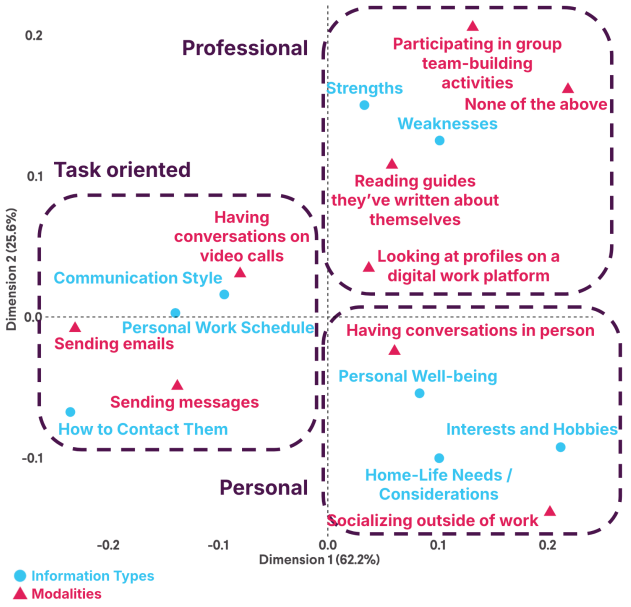

Figure 4: Correspondence analysis biplot of modalities (depicted with red triangles) and information types (blue circles). Modalities and information types are more likely to be associated with one another if they are closer to each other on the chart. Three clusters of modality-type associations are annotated with dashed lines: task-oriented, professional, and personal. (n=455)

3.4 Summary and Discussion of Study 1 Findings

Overall, Study 1 highlighted the top most valuable information types: Strengths, Communication Style, How to Contact Them, and Personal Well-being, informing how companies approach what should be shared in onboarding activities or the recommended fields to be filled out in user profiles on work messaging platforms like Slack or Teams. While current key forms of CMSD in such platforms (e.g., profiles and status updates) are viewable by anyone on the platform, our findings surfaced that most KWs were NOT comfortable with sharing all of our information types with

everyone at their company, strongly suggesting the need for more granular privacy controls (see Audience-Adaptive Profiles) in Study 2). Future work could also explore how different forms of CMSD could impact comfort levels in disclosing information. We proposed three modality-type clusters via our correspondence analysis: professional, personal, and task-oriented. Traits associated with the modalities (including both digital and non-digital) of these clusters may suggest design considerations for CMSD targeted to those information types. For example, Strengths and Weaknesses in the professional cluster are associated with group team-building activities and written guides, perhaps suggesting that a more formal, structured, and collaborative approach to CMSD may be most amenable to this type of information, rather than, say, direct messaging a colleague. Personal information like Personal Well-being may suit a more nuanced, back-and-forth, person-to-person conversation. Task-oriented information aligns with traditional modalities of work-related communication, such as messaging or emails.

Interestingly, while Personal Well-being was consistently valued, there were key discrepancies in comfort and familiarity among remote workers compared to in-person and hybrid. This suggests a unique opportunity for future work around CMSD to support the disclosure of Personal Well-being, leading us to also specifically explore CMSD for Personal Well-being in a design concept for Study 2 (Automatic Status Updates).

4 Study 2: Speculative Design and Interview Study

Informed by our findings from our first study, we conducted an interview study with five speculative design concepts to explore *how* to design for CMSD, recognizing that *what* types of information should be disclosed (Study 1) can impact *how* (Study 2) it should be designed for CMSD. We first describe our speculative design process for generating design concepts, and then outline each concept. We then detail our methodology and findings.

4.1 Generating the Speculative Design Concepts

Speculative design is a design approach that focuses on imagining and exploring potential future scenarios [35]. Like Research through Design approaches [39], it views the creation of design artifacts as key to the research process. However, it emphasizes discussion on alternate and preferred futures, and less on future predictions (i.e., design solutions) or practical concerns of feasibility and implementation [11, 42]. Like similar HCI studies in recent years [5, 28, 47], we embraced speculative design as a method that excels in exploring emerging scenarios, challenging social norms, and integrating politics and values [35, 61].

We first brainstormed an extensive list of potential ideas for concepts with our research team, which included both academics and industry researchers with experience using work messaging platforms. Our brainstorming began with reflection on CMSD at work based off existing or adjacent literature and extended to consideration of both far-facing and near-facing future technologies (e.g., conversational AI agents). We narrowed our list to five final concepts, ensuring that there was a range of design coverage (e.g., automatic versus manual self-disclosure, and spanning the familiar to the provocative). The lead researcher fleshed out the ideas by creating sketches and generating written descriptions for each concept. We presented our concepts to a panel of HCI experts with both academic and industry research backgrounds outside of our research team. We iterated on feedback regarding parts of the sketch that were unclear or confusing. We took note of strong reactions to the design concepts, using it as pilot data to assess whether or not our concepts achieved the speculative design goal of "slight strangeness" [12].

Our design process was also shaped by key findings from Study 1. We embedded most of our information types across the design concepts, ensuring the top 4 most valued types were emphasized. We incorporated potential design considerations from the modality-type clustering, such as by having the Conversational Assistant jointly disclose Strengths and Weaknesses. We also dedicated one entire design concept (Automatic Status Updates) to Personal Well-being based on the disconnects around that information type that Study 1 uncovered.

4.1.1 Design Concepts. Here, we describe each of our five design concepts (see Figure 5 for an overview). All design concepts were grounded in a fictional generic work messaging platform which we called WorkNet. WorkNet incorporated key design elements such as direct messaging, channels, and profiles that are common to current work messaging platforms. For each concept, we highlight the questions we had around CMSD at work that guided their design. Please see the supplementary materials for the full design workbook, including detailed sketches and associated written descriptions for each design concept, which we used as part of the interview guide for Study 2.

The Gamified Profiles design concept explored the introduction of gamification elements and was guided by the question of whether or not that could help facilitate CMSD at work. In this design concept, one's WorkNet profile contains badges that are earned for filling out more of one's profile fields and being accurate in one's self-disclosure. Accuracy of one's self-disclosure is calculated based off endorsements (similar to those of LinkedIn) or doubts that other colleagues can give on profile fields. For instance, in Figure 5-A, a number of colleagues have endorsed Ethan's self-disclosure of his Communication Style as being accurate, earning him an "empathetic communicator" tag in pink. Badges and tags are also seen next to one's name on the WorkNet sidebar as well as in one's name next to authored messages.

The Conversational Assistant design concept introduced an AI-powered agent that monitors conversations between interlocutors and pops up just-in-time self-disclosure suggestions to the user based on what has been said. This design explores how KWs might respond to AI agents as mediators for self-disclosure. We explored two forms of the Conversational Assistant. The first form facilitated self-disclosure by allowing users to automatically populate the text message input box with profile information as appropriate based off the conversation (not shown). From the perspective of the recipient, it would still appear to be a message directly from the author. The second form had the assistant take a more active role in mediating the conversation by generating a report containing information about both interlocutors and posting a message with the report as a third-party in the conversation. In Figure 5-B, the agent creates

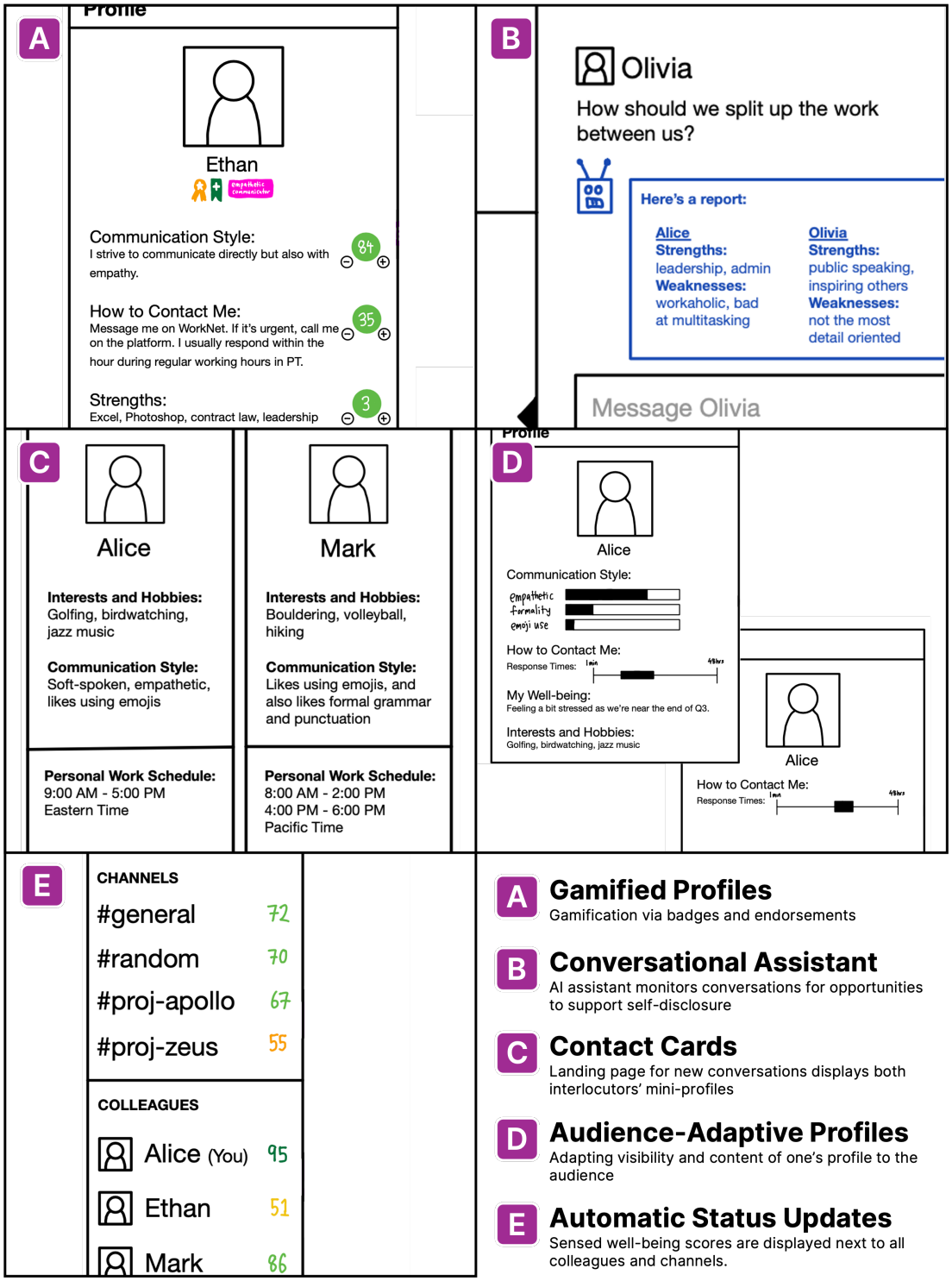

Figure 5: An overview of all five speculative design concepts: (a) Gamified Profiles, (b) Conversational Assistant, (c) Contact Cards, (d) Audience-Adaptive Profiles, and (e) Automatic Status Updates. Please see the supplementary materials for the design workbook, which contains full detailed sketches and written descriptions for each design concept.

a report of Olivia and Alice's Strengths and Weaknesses to help them divide up their tasks.

The Contact Cards design concept explored a new landing page for conversations between colleagues who have never interacted with each other before. This landing page displays a specialized version of both interlocutors' profiles side-by-side; we refer to these as Contact Cards. Rather than being able to directly jump into a conversation, interlocutors would need to first complete and review each others' Contact Cards. Most fields are pre-populated from one's profile, but you can choose to edit this information or add new fields to make changes specific to the dyad's work relationship. If one party includes an additional information field, then the other is required to reciprocate as well. For instance, in Figure 5-C, Mark decided to include information about his own Personal Work Schedule, meaning that Alice would need to do so as well before they can start a conversation. This design concept explored questions around information asymmetry and reciprocation in self-disclosure.

The Audience-Adaptive Profiles design concept explored adapting both the visibility and the content of one's profile to the viewer. This concept was guided by questions around AI, privacy, personalization, and semi-automated forms of self-disclosure. In semi-automated self-disclosure, we envision a system where some information about oneself is automatically analyzed and disclosed, while other types of information require manual self-disclosure. This design concept involves using AI to analyze the user's typical patterns and behaviors towards the viewer. It personalizes the profile information based on the relationship between the profile owner and the viewer. For example, displayed response times (part of How to Contact Me) would differ depending on who is viewing one's profile, based on one's past interactions with them. The visibility of profile fields also adapts to how close one is with the viewer – close coworkers see more information, whereas distant coworkers see less.

The Automatic Status Updates design concept illustrates a workplace where every employee is required to wear a universal sensor, which can accurately measure information about the user via a combination of biometric and neurological sensors. In this instance of the design concept, it can detect well-being and calculate it in the form of a score from 0 to 100. This concept raised questions about automated self-disclosure while also focusing more explicitly on self-disclosure of well-being information, which may have different implications from more work-related information types. We decided to subvert existing comfort levels with Personal Well-being (where most would not want to share with everyone in their company from Study 1) in our design concept by imagining a future where all workers openly shared. In Figure 5-E, calculated well-being scores are displayed next to employees in the WorkNet sidebar, and aggregated well-being scores are shown next to channels. For managers or close colleagues, a section of the WorkNet sidebar is dedicated to "Unwell Colleagues" – those with well-being scores below a designated threshold – allowing for check-ins within the platform.

4.2 Methodology

4.2.1 Participants. We recruited and ran the study on the UserTesting platform[4]. All participants were full-time US KWs who have either hybrid or remote work arrangements, use Slack or Teams, and work in teams of at least 6 or more individuals. We also screened for participants who considered building better work relationships with their colleagues as essential to their job (5-point Likert scale, 5 being extremely essential, selected for ratings of 4+). We also asked about their role (managers versus individual contributors), industry, tenure, and familiarity with their coworkers to elicit diverse and varied perspectives on our design concepts.

Study 2 was conducted with 12 participants (women=4, men=8, non-binary=0, see Table 1 for overview) whose ages ranged from 23 to 57 (median=41). There was an even split of managers versus individual contributors (6 each), with a range of seniority levels including junior, senior, VPs, SVPs, and executives. All had hybrid work arrangements except 2 fully remote workers. 7/12 participants worked at their current company for 5+ years, 2/12 for 2-5 years, and 3/12 for 1-2 years. Industries included finance, non-profits, consulting, government, telecommunications, retail, and real estate. 5/12 participants rated their familiarity with their coworkers as very familiar, 6/12 as moderately familiar, and 1/12 as slightly familiar. Each participant was compensated based on UserTesting's standard pay rate (typically 60 USD for a 60 minute interview session)[5].

4.2.2 Procedure. Semi-structured interview sessions lasted from 58-72 minutes (average: 64). Sessions consisted of three main parts: (1) a short introductory interview, (2) briefing of the grounding scenario, and (3) exploration of the speculative design concepts. One member of the research team conducted all interviews online on UserTesting. All interviews were audio and video recorded.

We first introduced participants to the study and asked them about their role and tenure at work, relationship with their colleagues, and how those relationships have been built over time. Then, we began the design exploration by briefing participants about the scenario in which all five speculative design concepts are situated. The researcher who conducted the interviews shared their screen and presented a slide deck that illustrated the grounding scenario as well as the design concepts. Participants were introduced to the fictional NextGen corporation – a fully remote, medium-sized company that uses the WorkNet platform. We also had participants take on the perspective of Alice, a NextGen employee who is close colleagues with Olivia, acquaintances with Ethan, and strangers with Mark, who are all also NextGen employees. As each design concept may focus more on a particular subset of information types for CMSD, we also described to participants each of the eight information types from Study 1 and asked them to keep all types in mind when reflecting on a design concept.

We emphasized that the speculative design concepts were not prototypes and that we were interested in reactions towards the concepts, but not in assessments of their feasibility or marketability. Participants were also assured that the concepts may be strange

[4]UserTesting has a diverse pool of qualified participants worldwide, and is well-recognized as an all-in-one solution for conducting user research, please see: https://www.usertesting.com/.

[5]See UserTesting's knowledge base for estimated details of compensation: https://help.usertesting.com/hc/en-us/articles/11880325020317-Custom-Network-contributor-compensation

Table 1: Overview of participant demographics. M refers to managers, IC refers to individual contributors.

P#	Age Group	Gender	Role	M/IC	Tenure	Location
P1	35-44	Man	Junior Management	M	5+ years	Hybrid
P2	35-44	Woman	Middle Management	M	5+ years	Hybrid
P3	18-24	Man	Skilled Office Worker	IC	1-2 years	Hybrid
P4	25-34	Man	Junior Management	M	2-5 years	Hybrid
P5	25-34	Man	Senior Staff	IC	5+ years	Hybrid
P6	45-54	Man	Senior Management	M	5+ years	Hybrid
P7	25-34	Woman	Senior Staff	IC	1-2 years	Hybrid
P8	45-54	Man	Skilled Office Worker	IC	5+ years	Remote
P9	25-34	Woman	Senior Staff	IC	2-5 years	Hybrid
P10	35-44	Woman	Junior Management	M	1-2 years	Hybrid
P11	55-64	Man	Senior Staff	IC	5+ years	Remote
P12	35-44	Man	Middle Management	M	5+ years	Hybrid

or provocative, and that they are encouraged to allow themselves to feel strongly about them. The order of presentation of the design concepts was fully randomized. For each design concept, the researcher introduced the concept and then asked questions of participants' initial reactions upon seeing it. The researcher also asked participants to reflect on the designers' intention behind the concept, who might find such a design desirable/undesirable at their company, and follow-up questions to explore specific design aspects of each concept. After going through all five design concepts, we briefly asked participants if they had any additional overall impressions or thoughts about the designs.

4.2.3 Data Analysis. Our data analysis was shaped by a critical realist [41, 65] ontology and constructivist [65] theoretical perspective, enabling us to emphasize context while also advancing design based on an informed, but incomplete view of reality. We used reflexive thematic analysis [15], taking a primarily inductive approach, while being theoretically informed by existing literature in computer-mediated communication, online self-disclosure, and psychological safety.

The lead researcher analyzed the entire dataset. Although they did not conduct the interviews, they engaged in the analysis process closely with the researcher who collected the data and immersed themselves in the dataset as familiarisation. All members of the research team were heavily involved in all aspects of the data analysis, including iterating on the codes, code groups, generating preliminary themes and iterating towards final themes, spanning over several months. This process emphasized multivocality, or multiple perspectives, over the need for multiple coders, as depth of insight should be valued over uniformity in assessing rigour of qualitative analysis [17, 83]. In line with best practices on conveying prevalence in thematic analysis [16] we do not report counts of theme frequency (e.g., the number of participants that mentioned a theme). Where appropriate, we used common expressions in qualitative analysis such as "a few", "many, or "a majority of" simply to provide an estimation of frequency [17].

Researcher Positionality and Reflexivity: Interviews were conducted by a member of the research team who is a principal-level researcher at a large Country1-based software company. Data analysis was led by the lead researcher, a graduate student, but had input from the interviewer, as well as two other members of the research team, who are both professors from academic institutions. All team members have ample hands-on experience with using both Slack and Teams for work, which are two of the most prevalent work messaging platforms in the industry.

4.3 Study 2: Interview Findings

We first describe participants' overall reactions to the design concepts to contextualize our interview findings. Then, we detail findings from our thematic analysis, identifying themes related to workers' attitudes, tensions, and desired design characteristics for CMSD at work.

4.3.1 Overall Reactions to Design Concepts. Data was collected from November to December of 2023, a year with significant layoffs across various industries. We note this to contextualize our findings, as this may have led to additional pressure on KWs to value classic notions of productivity at work rather than taking on a broader perspective of what it means to spend their time well [46] by fostering relationships with their colleagues. P1 and P8 also both mentioned layoffs as a concern during our interviews with them.

Overall, the reactions to the five design concepts were **mixed and nuanced** (see Figure 6). All concepts had at least one positive, negative, and mixed reaction, except for Automatic Status Updates. This overview and categorization does not aim to inform future design decisions around these concepts, especially due to their speculative nature, but to ground our thematic analysis findings. The **Audience-Adaptive Profiles design concept received more positive** or neutral attention overall. Participants liked how privacy was a focus and that the information displayed was personalized to the viewer. Those who felt more neutral, mixed, or even negatively about the design raised concerns about the design being a potential barrier to getting to know strangers, as less information was displayed for them. Unsurprisingly, **Automatic Status Updates received the most negative attention**. While some participants who had mixed reactions recognized the value of being

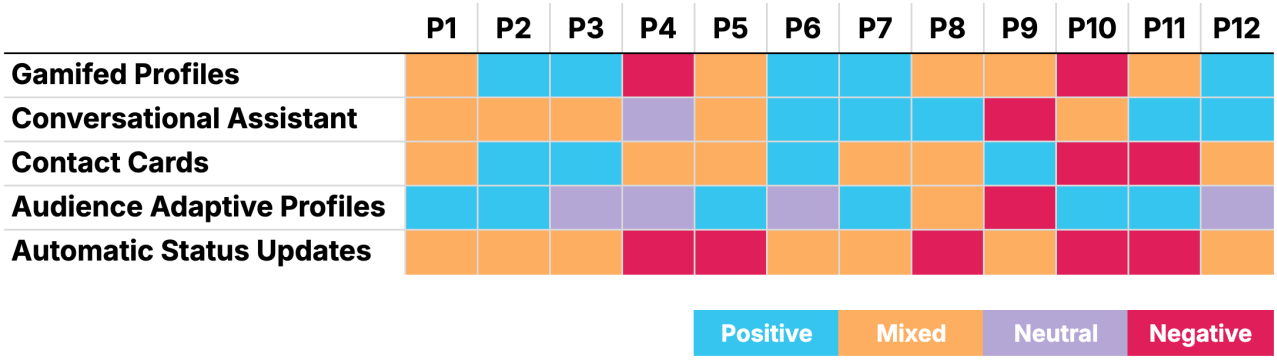

Figure 6: Overview of participants' reactions to the design concepts. Reactions were categorized into positive, mixed (where participants reacted both positively and negatively to aspects of each concept), neutral (neither positive nor negative), or negative.

aware of their colleagues' well-being to help contextualize their interactions with them (e.g., checking in or not approaching them with work when unwell), most strongly disliked the *"dystopian"* (P4) and *"invasive"* (P10) nature of the design concept. Some prefaced that such a concept would be helpful *"...if you have a great team that can support each other"* (P7).

4.3.2 Thematic Analysis Findings. We constructed three high-level themes around participant attitudes regarding CMSD at work. The first theme shows how CMSD should adapt depending on the stage of the relationship between work colleagues. The second theme highlighted how CMSD can be a socialization process for workers as they navigate their social identity and belonging at work. The last theme identified the influence of power dynamics on workers' self-disclosure decisions. Altogether, these three themes inform the dynamic role of CMSD at work (Theme 1) and the attitudes and considerations that workers have towards self-disclosure decisions at work and the interplay with computer-mediated support (Themes 2 and 3).

Theme 1: CMSD evolves alongside relationships: CMSD was viewed as a complement, but not a replacement, to everyday conversations or work interactions. Participants expressed different needs for CMSD support depending on the stage of the relationship between work colleagues. When colleagues are complete strangers, CMSD can help with reducing barriers to interaction and surfacing conversation starters. Even after colleagues have an established regular interaction with one another, computer-mediated support can still help workers to self-disclose certain types of information that require more effort or intention to share.

1.1: CMSD complements work interactions: Participants emphasized that CMSD at work should not replace the need for interaction but rather should be complementary to it, and is perceived to be more acceptable and useful in this manner. Participants regularly described situations where they learned about their colleagues through casual conversation or work interactions. However, P4 also described how CMSD can help complement and improve colleague interactions: *"[Audience-Adaptive Profiles] is leaning more towards the formal end, but it's not necessarily a bad thing because I see his profile more as a reference information than anything else. It's not necessarily actionable, it's good to know this for my own benefits of how to interact with them."* Here, P4 delineates information gathered through CMSD via profiles as simply "reference information" that is "not necessarily actionable", suggesting that, while useful, it cannot replace direct conversations.

The lived experience of interacting with colleagues was viewed by participants as a more trusted information source than what was shared via self-disclosure in profiles, due to questions of accuracy or honesty. P7 recognized the limitations of peoples' ability to self-assess, affecting accuracy: *"...people tend to see themselves different than others see them so, of course, like you, you base your opinion really on your own experience with this person, not what they think of themselves."* Many participants also grasped the prevalence of self-presentation [74] efforts, especially within work organizations, where one attempts to present a particular, often favorable image of oneself to those around them. While accuracy and honesty were questionable, participants did not entirely discount the value of CMSD, maintaining its complementary nature as a useful source of information as it revealed what the discloser thought of themself. For example, although P7 asserted in the above quote that lived experiences were most important, they still felt like there was value in self-disclosed information: *"I feel like it's valuable to for me as like office manager to read what this person thinks about themself, like in this profile."*

Participants also implied that the way in which CMSD complements work interactions needs to account for the stage of the relationship between colleagues – whether it is before an initial interaction or when a relationship has already been established. We describe how CMSD can support each of these stages in the following sections (1.2 and 1.3, respectively).

1.2: Reducing barriers to facilitate initial colleague interactions: Colleagues who have not previously interacted with each other may face barriers that prevent them from reaching out to one another on work messaging platforms. Participants shared that barriers included feelings of fear, awkwardness, or not knowing how to initiate the conversation with appropriate topics. New hires expressed that they were especially cognizant of these barriers as they are still in the early stage of forming new relationships with their colleagues.

Seeing certain types of information ahead of an initial interaction, as shown in Contact Cards, was helpful for getting a sense of who the person was: *"Just looking at the Communication Style and How to Contact Me, those actually help, if someone's empathetic and helpful, then they don't mind a message."* In the quote, P8 shares how welcoming profile signals may encourage others to reach out by reducing uncertainty about expected responses and contact preferences to prevent misunderstandings.

Specifically, participants shared that seeing information like Interests and Hobbies on colleagues' profiles was important for giving them conversation starters or icebreakers. As a manager, P6 shared how their current practice for strengthening relationships with their direct reports is to write down their direct reports' personal interests whenever they come up in one-on-one meetings: *"I had no idea one of my employees was a big concert-goer or that she liked a certain type of music. [Knowing that stuff], it puts you in a position where your conversation, your icebreakers, are at a different level versus just talking work. And people start [sharing] more about their likes and talking about their personal life as well."* Being cognizant of non-work or personal topics that would resonate with their colleagues was also highlighted by a few participants as a helpful way to lighten the mood of a conversation or to help make it more relaxed. P3 also describes how profiles are useful for initial relationships, but not as much beyond that: *"[Profiles] are useful to an extent. It's not black or white. It's not like it's immediately not useful. But you can only use that to an extent [...] are you guys actual friends outside of work? So I think profiles can just end at helping with initiating and pretty much just that, yeah."* For already established relationships as alluded to by P3, CMSD will need to evolve beyond profile information.

1.3: Maintaining established relationships through intentional self-disclosure: Computer-mediated support can help acquainted coworkers disclose or learn about information regarding their colleagues, especially for types of information that aren't typically discussed in their everyday work conversations. P2 shared how seeing the different types of information in our design concepts prompted them to think about how many of these topics are *"...things you probably won't even ask the other person (...) maybe you're not really asking these questions in your day-to-day communication."*

For example, while many participants disliked the invasiveness of the Automatic Status Updates design concept, many saw the value in the concept's disclosure of well-being information, as it can help strengthen work relationships and can be a topic that isn't often discussed in everyday work. Without CMSD support, P5 talks about the effort and intention required to disclose an event that had a significant impact on their Personal Well-being, especially working remotely: *"...having any life event like that that might be impacting your work that day in a more remote setting, you have to be much more intentional about specifically telling people… if you want anyone else to know there's not as high of a chance that the person you specifically told is also specifically telling more people because there is no water cooler moment that can happen."*

The Conversational Assistant displays both interlocutors' Strengths and Weaknesses together. A number of participants expressed how this concept could help with certain topics that are important to self-disclose but may feel more awkward to do so, as it may look like bragging, such as Strengths. For example, P3 said of the design concept: *"A feature like that would definitely help a lot if you don't even have to say that yourself. This is a bot saying it to you based on what you chose as Strengths and Weaknesses on your profile, so it eliminates the awkwardness I would say."* Participants were open to offloading the act of disclosing certain types of information to computer-mediated support to maintain intentional self-disclosure while mitigating the awkwardness of broaching a subject in conversation.

Theme 2: CMSD for socialization at work: CMSD is part of a socialization process where employees absorb and learn the culture of their teams, groups, and the broader organization. This understanding helps them to align their self-disclosure with the established norms and values of their various work communities. While socialization was important, KWs still tried to retain their own unique personal tone and identity. We highlight how workers learn by observing the self-disclosure behaviours of their colleagues to navigate professional boundaries at work.

2.1: CMSD should be personal and unforced: Participants shared that CMSD should be personal, allowing them to highlight their sense of individuality. The Conversational Assistant was designed to explore how AI-powered conversational assistants or agents might act as mediators in self-disclosure through work-related messaging. Participants generally had a positive reaction towards the Conversational Assistant for saving time when self-disclosing information about oneself, such as in P6's quote: *"It's kind of cool. Let me save you some clicks. Versus typing it all out there, it's kind of like the suggested speech."* However, a number of participants who did voice concerns about this concept took issue with not wanting to lose their own personal tone. Participants shared how their personal tone is important as a differentiating factor, such as P3: *"It distinguishes me based on age, based on personality, based on casualness or what I bring into the conversation [...] personally, I would want to be perceived as someone fun, chill, laid-back, and funny."* For P1, differentiating themself was especially important to mitigate potential job repercussions: *"I work with a large organization, with 10,000 employees, we just had some layoffs. I don't want to sound like a computer. I want myself and the value I bring to the organization to differentiate myself versus other people."*

P4 gives an interesting example of a fully-developed profile for a new hire that highlights their desire for more personal CMSD: *"If a new employee would come in and their profile would be immediately developed for me personally, that seems a little almost off-putting. There's a certain element of personable touch to this that I feel is maybe missing for someone who's immediately entering this company. Maybe there's a buffer time where like – give them a bit of time to just personally interact before this kind of profile is set up."* Here, P4 describes how interactions between colleagues seem to be a precursor for shared profile information, to make that information seem more personal.

In addition, while participants recognized the need to mandate some amount of CMSD in order to achieve a level of buy-in, participants expressed concerns that forced approaches to CMSD often lead to the sharing of superficial, less meaningful, and impersonal information (e.g., during mandatory team-building events). They emphasized their preference for voluntary self-disclosure, not only

for the sake of respecting an individual's privacy and comfort levels, but also when discussing more nuanced types of information like Personal Well-being and Communication Style, as these topics are best shared freely, without pressure, to preserve the authenticity and value of the information that was disclosed. P4 summarizes: *"I think forced interactions are not going to create that value that you want and everyone needs to want to [self-disclose] to some degree. If there's not at least that innate enthusiasm, then I just don't see the value of it because it's all about a personal interaction at the end of the day."*

2.2: Navigating the personal-professional boundary by example: Workers sought to learn from and observe their colleagues' self-disclosure to help them navigate the personal-professional boundary, to understand what is deemed appropriate to disclose and discuss in the particular work context they are in.

Participants expressed how they would often have their own ideas and assumptions of what an appropriate personal-professional boundary is but that they needed to adapt it to consider the boundaries of those around them. CMSD could help workers navigate this. For example, P3, a new hire, shared that a challenge for them was not knowing which kinds of topics were appropriate to discuss at work with a stranger. Contact Cards displayed profile information that helped them navigate this boundary: *"...for someone new like me I think it's kind of intimidating at first, not because they are intimidating, but it's just the idea of initiating a conversation and asking about more personal stuff in a professional setting. It's kind of intimidating because I have presumptuous notions of like they might not be into talking about their personal life and stuff like that, so [Contact Cards] gives me a lot of pretext."*

As a specific example, P9 described how their team has an onboarding practice where all new hires create a slide to introduce themselves. P9 struggled to figure out what to share and what not to, in part out of a fear of *"...making an error in judgment about what is appropriate to share at work."* Managers at P9's company shared examples of existing employees' slide decks to new hires as a way of helping them get *"a sense of who's already on [the team] and what to put on their [slide deck]."* P9 reflected on their attempts to navigate the personal-professional boundary: *"...it's all about finding that clean line, like, a sports opinion is generally a harmless opinion to share. Because it doesn't really affect anything that you're doing. No one's sharing really controversial opinions or getting political in any way. Like, they're very harmless things that we're talking about."*

Theme 3: Power dynamics and CMSD:. Participants' reactions to our design concepts underscored the importance of a power lens for CMSD. Our initial assumption was that the closeness of one's relationship with colleagues was what primarily governed one's willingness to engage in CMSD at work. While the adaptability and privacy focus of the Audience-Adaptive Profiles was well-liked, our assumptions were challenged by a number of participants who expressed that they don't necessarily want to self-disclose less to those that are strangers, in part because a lack of information might end up blocking an initial interaction (in line with subtheme 1.2). For example, P6 says: *"...if we're trying to develop some sort of a relationship, even with colleagues that are further away from us, it might not be a bad thing to put in some more information."*

Another explanation could be due to a more intricate interplay of factors where power dynamics, rather than simply relational closeness, dictate self-disclosure behaviours. For example, participants like P9 expressed how they were more willing to share more sensitive information to those that they didn't work with as often or were not part of their team because there were less potential job consequences: *"The people that I work with, not necessarily directly, but on partner teams... I would be happy to tell them [about my Personal Well-being] because I don't work with them every day. So I feel like they don't have the same perceptions of me that my direct team does... it's just, there's still that awkward hesitation to tell leadership when you're sick."* (P9)

External clients are a unique type of audience to self-disclose to due to the differences in power dynamics in this type of work relationship compared to, say, between an employee and their manager. Relationships with clients are generally time-limited and offer a layer of protection from potential job consequences present in internal work hierarchies, as P8 describes: *"I feel like external clients, they're more open about things that are going on personally... maybe it's because we work for different companies, and if I learned something that was harmful or just bad and they'd be worried that it would get to somebody else within their company. Maybe people are more open when it's almost like a stranger... you can share it with someone and it's possibly never seen again and that'd be ok. I feel like I know a little more about some of my clients than I do some of the internal folks."*

5 Discussion

Our findings from both Study 1 and Study 2 inform the design of CMSD at work by considering both *what* is being disclosed (the information types) along with *how* it could be disclosed (the speculative design concepts). We discuss the importance of supporting evolving, intentional work relationships, the tension between personal identity and team belonging, privacy and policy implications for organizations, and conclude with study limitations.

5.1 Supporting evolving, intentional work relationships

CMSD should not be designed with a one-size-fits-all approach that overlooks the stage of the relationship between individuals, but adapts to it. These findings are in line with social penetration theory [6, 23], which states that as relationships between individuals develop, interpersonal communication, and consequently, self-disclosure, moves from shallower, less intimate levels to deeper, more intimate ones. Study 1 also reminds us to further explore designing to account for the information type that is being disclosed, considering the intimacy and risk levels associated with disclosing each in the work context. Study 2 participants also alluded to the awkwardness around explicitly self-disclosing certain information types, which may include both Strengths and Personal Well-being. All in all, the goal is to design to support an appropriate (i.e., not over-disclosing nor under-disclosing) level of both personal and professional self-disclosure at work that can lead to stronger, more trusting relationships with one's colleagues.

Our findings suggest that early stage CMSD should surface low-risk information to help initiate conversations. For example, having

Interests and Hobbies on one's profile may be most useful at early relationship stages, but perhaps not beyond that. This may explain the low value Study 1 respondents placed on it, while participants in Study 2 did value it as an icebreaker.

In later relationship stages, when self-disclosure involves more sensitive (and also more valuable, like Personal Well-being) information, CMSD could take on a different nature – rather than having individuals disclose such information on their profiles, CMSD could act as a nudging device to remind individuals to disclose with one another. In particular, CMSD could encourage and support the disclosure of information that requires more intentionality, may be awkward to share, that doesn't come up in day-to-day work conversations, but helps sustain and deepen the work relationship. However, future systems would also need to be careful to avoid encouraging over-disclosure or inappropriate self-disclosure (e.g., crossing professional boundaries), such as by reminding users to be mindful of the impact of their self-disclosure, supporting reflection on what is being shared.

For example, one could imagine a version of the Contact Cards design concept (which currently only focuses on the beginning stages of a relationship), but adapted for relationship stages. This might be a banner atop the conversation that nudges interlocutors to self-disclose additional information suited for an established relationship. Or, when certain information might feel awkward to self-disclose, generative AI could suggest tailored prompting questions to help a worker intentionally ask their colleagues about it, making sharing opportunities easier. Along with fostering more psychologically safe [36] and trusting organizations, such examples of stage-adaptive CMSD may be key to supporting the sharing of information types like Personal Well-being among remote workers. Future work could also explore conversational AI agents acting as neutral third-party disclosers of "awkward" information types, as participants expressed some openness towards this in the Conversational Assistant.

Design opportunity 1: Adapt the role of CMSD based on the stage of the relationship between colleagues. Early stage CMSD should surface information to support and sustain initial conversations, reducing barriers to interaction. Later stage CMSD can act more as a nudging reminder to reflect or facilitate question-asking, fostering intentional, appropriate, and deeper self-disclosure.

5.2 Navigating the tension between personal identity and team belonging

A key finding was the importance of retaining a personal touch to CMSD. This was illustrated by some participants' distaste in having a chatbot self-disclose on their behalf via the Conversational Assistant – they wanted to retain their own personal tone in messaging. Their personal tone represented their individual identity, which they wanted to be unique, to stand out, to represent themselves in groups at work, in line with socialization and social identity theory [48]. This emphasis may suggest that workers desire increased flexibility and customization in profile fields, both in content to be shared and the medium in which it is shared, beyond simple text fields (e.g., media richness theory [31]).

Design opportunity 2: Support and encourage custom, self-defined profile fields. Consider supporting richer forms of personal expression through multimedia like using photos, videos, and audio clips in CMSD.

As a socialization process, CMSD influenced how workers fit into the broader group, and specifically how to grasp and navigate the personal-professional boundary in their organizational group. This tension between trying to carve out personal identities while also fitting in has unique considerations in the work context. Companies should be transparent and clear about self-disclosure guidelines without discouraging expressions of personal style and identity. Examples from managers, or even upper leadership or executives may be especially helpful to assuage concerns about appropriateness. A design opportunity could be to not only surface colleague profiles automatically during onboarding processes for new hires, but also highlight and celebrate unique aspects of others' profiles, while also emphasizing similarities (i.e., work norms) within teams. For example, an information bubble could appear underneath How to Contact Them that notes how most teammates tend to prefer to work and collaborate via email.

Design opportunity 3: Support initial CMSD efforts (e.g., profile creation) by automatically surfacing examples from peer colleagues and managers, highlighting similarities and celebrating differences. Display a variety of examples that might differ in both personal and professional content to showcase diversity and the range of appropriate possibilities within an organization.

5.3 Rethinking privacy and policy implications for organizations

Traditional notions of privacy may suggest that a worker is willing to self-disclose more to those who are close to them (e.g., teammates), whereas a worker might be more hesitant to self-disclose to a stranger. Our findings introduce nuance to this notion, especially when considering power dynamics. Self-disclosing to a stranger may be less risky in terms of potential job consequences compared to self-disclosing to a colleague competing for the same job opportunity. Encouraging CMSD comes hand-in-hand with fostering a more psychologically safe and trusting work environment, as workers need to feel comfortable and empowered to self-disclose. As workers open up and self-disclose, they trust their colleagues more, and consequently then also feel like they can self-disclose more openly.

An important question around CMSD, especially when it comes to organizations, is whether or not self-disclosing information is a critical part of one's job. What is the line between what is primary to work and what is secondary? Our findings show that while CMSD should be unforced, there may be a need to mandate some amount of self-disclosure, especially for information that is essential to getting work done, such as Personal Work Schedule. While self-disclosure can benefit individuals in developing stronger work relationships, some may only want to spend time at work doing the essentials, which to them may not include relationship building. How can we reconcile this? One approach is to avoid

heavy-handed, one-size-fits-all policies that apply to all members of an organization. They may lead to forced, impersonal, and unhelpful self-disclosure, especially if privacy and power dynamics are not adequately considered. Instead, managers might consider mandating a minimum amount of self-disclosure of certain information types, agreed upon by the members of the team (e.g., making it a collaborative process, aligning with our theme of socialization), giving agency to those who want to disclose further. Clear, co-constructed guidelines (e.g., team-level agreements [57]) that respect individual agency, privacy, and are transparent around power dynamics are the key to helping workers feel more comfortable with self-disclosure.

5.4 Limitations and Future Work

We emphasize the exploratory nature of our work on CMSD – our intention is to be generative, rather than conclusive, about the nature of designing for CMSD, forming a rich basis for future work to build on. We recognize the smaller sample size of 12 KWs in Study 2, even though it is in line with common sample sizes at CHI for remote interviews [22]. While we did not limit Study 2 to remote workers, future work could consider doing so to further draw out nuances in designing CMSD for remote workers. For both Study 1 and Study 2, all participants were recruited as North American KWs. While they ranged in cultural backgrounds, they lived and worked in North America, and thus were influenced by Western cultural norms and perspectives about work, both individually and from the organizations they worked at. Future work could explore the likely differences in attitudes towards privacy, self-disclosure, and work culture, especially when broadly comparing with Eastern cultures that are more collectivist [13, 73, 87]. Generational differences in attitudes towards self-disclosure and work relationships are another interesting avenue of future research. In addition, Study 1 used a Qualtrics panel for recruitment, which may have skewed our responses toward workers who are more likely to engage with online surveys and are familiar with digital tools, potentially limiting the diversity of our sample where we saw more executives and managers than representative of the general knowledge worker population. Our goal with Study 1's eight information types was to synthesize an initial, but not comprehensively validated, list for exploring how KWs' attitudes. We note that further insights could be drawn from a different set or a wider range of information types. Future work could more deeply explore the integration between information types and design concepts, such as by explicitly asking on the same design concept for different information types. Study 2's speculative design involves a grounding scenario that may introduce a level of artificiality, a potential strength and limitation that is shared by other scenario-based methods, but is more appropriate for exploratory studies like ours. We adhered to best practices in speculative design [35] by providing a rich description that would help participants immerse themselves in the scenario. Study 2 was also grounded specifically in work messaging platforms, but CMSD could also be explore in other work contexts, such as video conferencing, calendars, or email.

6 Conclusion

In this paper, we explored how to design CMSD for work in order to foster and maintain stronger work relationships, with a consideration towards remote workers. We took a mixed-methods approach with two studies: (1) a survey of 455 knowledge workers and (2) an semi-structured interview study with 12 knowledge workers that were prompted with five speculative design concepts to elicit reactions and attitudes towards CMSD at work. In Study 1, we saw how Personal Well-being was a top-4 valued information type, but was uncomfortable for workers to share and was information that remote workers in particular were less familiar with about their colleagues. Our analysis in Study 2 showed that CMSD should adapt to the stage of colleagues' relationships, and should be unforced and designed to maintain the individual's personal touch. We discuss how to design to adapt to the evolving nature of colleague relationships and how CMSD can help workers navigate tensions between showcasing their personal identity and fitting in with their team, suggesting several potential design opportunities. The findings and discussion around CMSD we present help to shape the design and further exploration of technologies to help support self-disclosure at work, anticipating the shift towards flexible work where colleague relationships will increasingly need to be formed via self-disclosure that is "beyond the watercooler."

Acknowledgments

We thank the anonymous reviewers for their valuable and constructive feedback. In particular, we are grateful to Slack's Research and Analytics team and Workforce Lab for providing feedback and supporting this study. We would also like to thank members of the UBC eDAPT Lab for helping to iterate on the design concepts. This work was supported by Slack and funding from NSERC: *Designing interactive digital technologies for a post-pandemic world* (RGPIN-2023-045457).

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A Appendix: Additional Figures and Tables

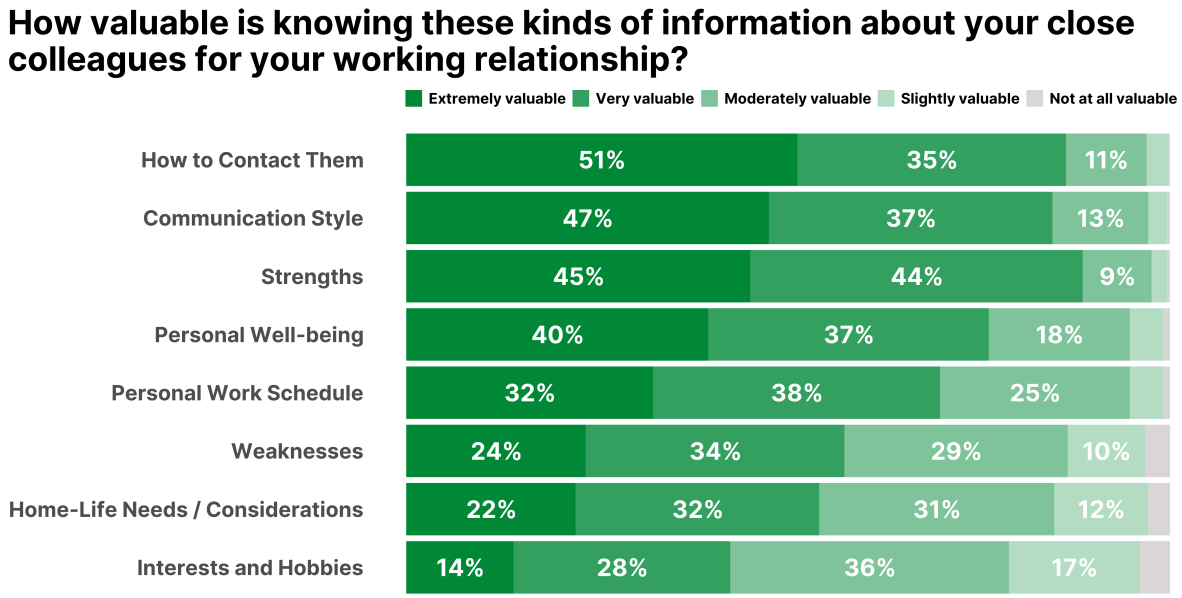

Figure 7: Percentage bar chart of respondents' (n=455) rated value towards each information type, stacked horizontally and sorted in descending order of the proportion of respondents that answered "Extremely valuable". Percentages less than 5% are hidden from the chart.

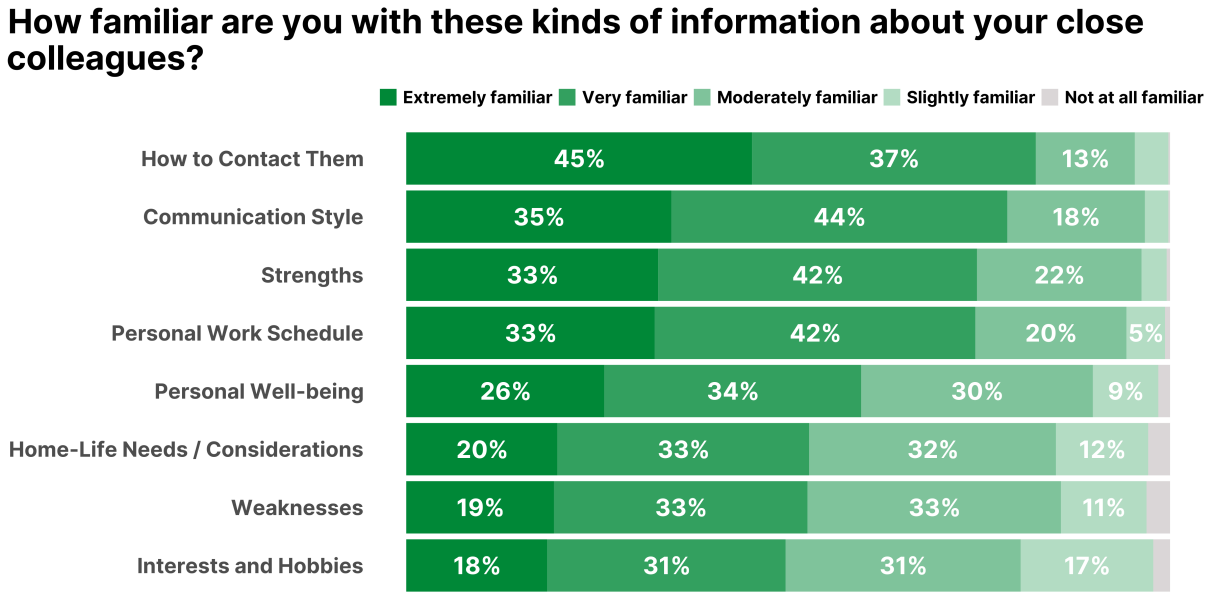

Figure 8: Percentage bar chart of respondents' (n=455) familiarity with each information type of their close colleagues, stacked horizontally and sorted in descending order of the proportion of respondents that answered "Extremely familiar". Percentages less than 5% are hidden from the chart.

Received 12 September 2024; revised 10 December 2024; accepted 17 January 2025

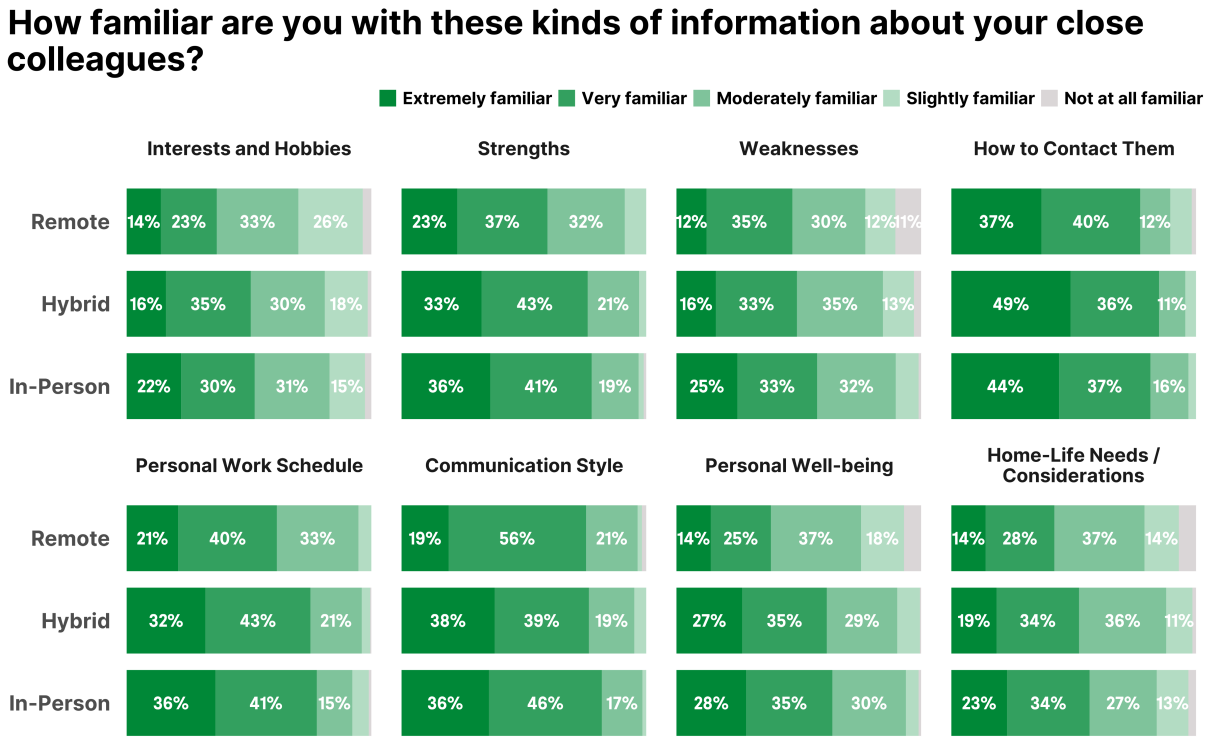

Figure 9: Faceted percentage bar charts of respondents' (n=455) familiarity of an information type, for each working location (remote: n=57, hybrid: n=205, in-person: n=193). Each individual plot has bar charts stacked horizontally and sorted in descending order of the proportion of respondents that answered "Extremely familiar". Percentages less than 10% are hidden from the chart.

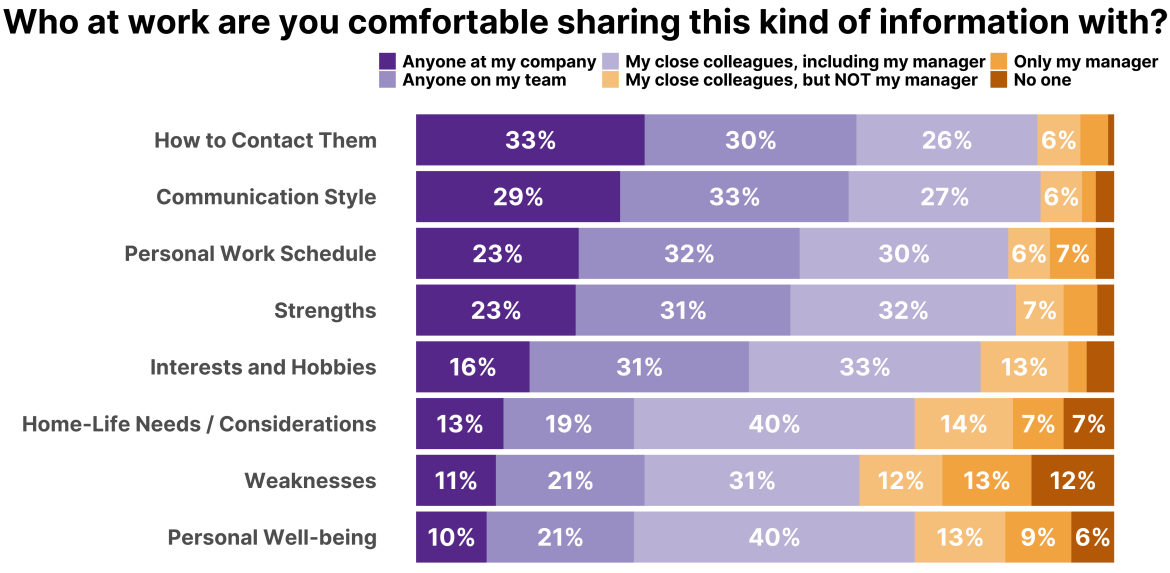

Figure 10: Percentage bar chart of respondents' (n=455) comfort levels with sharing each information type, stacked horizontally and sorted in descending order of the proportion of respondents that answered "Anyone at my company". Percentages less than 5% are hidden from the chart.

Modalities Proportion of usage across all information types	Total N = 455	Working Location In-Person 193	 Hybrid 205	 Remote 57	Role Executives 75	 Managers 248	 ICs 132
Having conversations in person	26%	29.4%	24.8%	14.9%	21.1%	26.2%	27.9%
Sending emails	14%	14.4%	13.3%	18.6%	12.6%	14.4%	15.3%
Socializing outside of work	13%	14.0%	13.7%	8.0%	12.4%	13.8%	12.4%
Having conversations on video calls	13%	10.0%	13.9%	21.5%	13.8%	13.0%	13.0%
Sending messages (e.g., on work messaging platforms like Slack or Teams)	13%	11.8%	12.8%	19.8%	12.4%	12.6%	14.8%
Participating in group team-building activities	10%	9.9%	9.6%	8.4%	10.4%	9.7%	8.8%
Looking at profiles on a digital work platform (e.g., Teams or Slack profile, LinkedIn)	5%	5.1%	6.0%	4.5%	8.7%	5.1%	3.7%
Reading guides they've written about themselves (e.g., a personal operating/user manual)	5%	4.8%	5.5%	2.6%	8.5%	4.6%	2.7%
None of the above	1%	0.7%	0.6%	1.7%	0.1%	0.6%	1.5%

Respondents could select more than one modality for each information type.
Top 4 per column are highlighted: Top 1 Top 2 Top 3 Top 4

Figure 11: How do KWs self-disclose at work? Proportion of respondents (n=455) indicating how they self-disclose by modality, cut by working location and role. ICs refers to individual contributors at work. Across all information types, respondents most frequently conversed in-person, sent emails, socialized outside of work, used video calling and sent work messages to learn about their colleagues. Remote workers unsurprisingly engage in less in-person conversations and more video conferencing and workplace messaging.

Table 2: Table of codes generated from the open-ended question on value: *What is one piece of information about your close colleagues that is valuable for you to know for your working relationship?* Our eight information types are emphasized**. Responses (n=455) could be multi-coded. Only codes with a count of at least 10 are shown, with an exception (*) made for** Weaknesses**.**

Code	Count	Example Responses
Reliable	46	They are reliable and responsible I just need to know that they are reliable people who own up to their mistakes
Trustworthy	43	They have my back regardless of the circumstances; Trust and communication is a must
Work Ethic	41	Dedication to the job; Hardworking
Strengths	41	Their particular skill and talent of each individual; Their strengths and abilities to perform tasks
Communication Style	38	Their preferences on office communication; How they communicate
Personality	35	I want to know what kind of personality they have; What type of personality and temperament they have
Basic Job Information	35	Their position and duties; If they've reached their quota for the day and week and general sales totals
Teamwork	31	They are good at teamwork; We work well together
Working Style	25	Their preferences with getting work completed, organization, and communication; Their part in the working process and their work style
Honesty	21	Honesty is important because if they are not honest means they cannot be loyal or trusted; Are they honest
Job Experience	20	Working experience; How many years they have been with the company
Home-Life Needs / Considerations	20	Their family info, children, names, etc.; Need to know about their personal lives to build a connection
Interests and Hobbies	19	Their interests and family life; Their likes and dislikes
Respect	16	Everyone respects and understands each other; My colleagues and I have mutual respect to one another, we make decisions as a team
Get Along	16	Getting the job done harmoniously; They are very friendly
Personal Work Schedule	11	What their schedule is like so I know when they are available and online to meet; What times of the day they are the most productive
Personal Well-being	11	Their home life and mental health; How they are doing health wise physically
How to Contact Them	10	How to get in touch; How to contact them and that's about all that I can think of right now
Weaknesses*	5	Each of their individual strengths and weaknesses so I know where to put them; Strengths and weaknesses