Effective communication in a hybrid work environment: The perspective of design professionals

Problem Statement. The expansion of remote work occurring in many workplaces in response to COVID-19 delivered a quick solution to preserve the continuity of work and create near-term productivity boosts; however, the longer-term impact of hybrid working arrangements on a company's culture, performance, and project outcomes for architecture, interior design, and engineering organizations is uncertain. These creative fields require highly collaborative teamwork involving original problem-solving that spans the built and natural environments and the ability to assess and specify physical building materials. Designers experience considerable time pressure from work requirements and deliverable schedules. As a result, design professionals working in multidisciplinary project design teams often require personal connections to build trust and desire in-person collaboration, hands-on learning, and spontaneous socialization. These needs traditionally require physical proximity and chance encounters between individuals with diverse expertise to cultivate rich sources of innovation.

Importantly, these personal interactions support effective communication. Effective communication requires "passing relevant information, in a style and form that is clearly understandable, to the right person at the right time" (Goutam, 2013). Effective communication sits at the intersection of the sender, receiver, and process and must be informed, supported, and leveraged by organizational, social, and media dynamics (Balleman, 2000). Most communication issues in project design stem from the underlying behavioral process, including organizational and people-oriented components that significantly impact the ultimate result. (Coughlan & Macredie, 2002; Nima et al., 2015). It is necessary to understand the team and individual to align the use of appropriate media to achieve effective communication (Ean, 2011; Nima et al., 2015). The additional complexity of a flexible hybrid working arrangement can be counterproductive to what design professionals need (e.g., in-person collaboration, hands-on learning, and spontaneous socialization). There are challenges in achieving effective communication within these arrangements, including using multiple communication media, reduced proximity, and differing work schedules (e.g., Monday-Friday, Tuesday-Thursday). Therefore, this research examines the experiences and perceptions of project design team members to answer the primary question - *What factors are related to effective communication in a hybrid work model at a multidisciplinary design firm?*

Research Methods. To examine effective communication by designers in the hybrid work model, the study performed a thematic analysis of data collected from semi-structured interviews. The interviewees included architects, interior designers, and engineers at a large design firm in the southeast United States. The design firm was recognized as one of the Top 100 Giants by Interior Design Magazine, featured in VM + SD Top Retail Firm, winner of local, state, and regional AIA, USGBC, and IIDA awards. The firm and its projects have been well represented locally and nationally and accredited with over 250 awards, including being named American Institute of Architects (AIA) firm of the year in the last decade. The interviews were performed at two office locations belonging to the firm, which specialized in designing health care and office buildings.

For each interview participant, the researcher asked questions to elicit detailed responses and gather information about project communication behaviors, the current working environment

(e.g., home, shared office), and hybrid work strategies to achieve effective communication. Interviews were conducted with the project manager and representative project team members (e.g., design architect, project architect, interior designer, and workplace strategist). These interviews were conducted face-to-face and through the Microsoft Teams platform, depending on the interviewees' accessibility. All interviews were transcribed for further analysis. In total, interview responses were obtained from 70 design team members within 30 multidisciplinary design teams.

The researcher meticulously engaged in an eight-step inductive systematic process of coding and categorizing data to extract key themes and patterns. This process demonstrated high content inter-rater reliability (Creswell & Poth, 2018). The data was prepared, coded by tagging areas, compiled all of the codes, reviewed codes and eliminated redundancy, grouped codes into themes, assigned the codes categories, arrayed the codes into a conceptual map that shows the flow of ideas, and finally, wrote a narrative for each theme (Creswell & Poth, 2018).

Key Findings. After analysis, three themes emerged as factors relating to effective communication in hybrid work environments, which are summarized in Figure 1: (I) influence on communication media selection, (II) harmonizing design phases with communication methods, and (III) communication connection. One of the main themes, influences on media selection, examined individuals selecting a medium to achieve effective communication and exchange of information within a hybrid work environment. Several sub-themes supported this main theme:

(a) Alignment of Intention and Task. When utilizing a communication medium, it is essential to align the intention behind the message, the recipient of the information, the task at hand, and personal preferences for effective communication. The nature of the task being performed and the required level of collaboration influenced the choice of communication medium. Tasks that involve brainstorming or early design phases require more face-to-face interaction, while later project stages rely more on digital collaboration tools. An interior designer who is focused on project design and documentation described her actions and decisions in the early design phases,

> "We're very visual and tactile people, it's very much based on what we're thinking about what we're trying to explain. [If] we're brainstorming, being able to lay your hands on things and pull things up on the computer and look at each other's screens seamlessly. For example, I'm working on a concept palette for a project right now. It's sitting right here at my desk, and the [other] designer I'm working with is pulling a postcard off her desk, bringing it over, and laying it on the pallet. We're pulling up images on our phones or our computers. Now, all this could be done virtually and has been done virtually because we've obviously worked virtually for two years, and it definitely went slower."

Figure 1

Main themes and sub-themes

Main Themes		
Theme I	**Theme II**	**Theme III**
Influence on Media Selection: The selection of communication media becomes increasingly complex and is ongoing within a hybrid work model.	**Harmonizing design phases with communication methods:** Balancing the design process phase requires consideration of communication media attributes, tool availability, and the activities involved.	**Communication Connection:** Communication exists along a spectrum, influenced by factors like the physical environment, communication tools, and individual team member preferences, neither completely facilitated nor hindered by any single factor.
Sub-themes		
(a) **Alignment of Intention and Task:** When utilizing a communication medium, it is essential to align the intention behind the message, the recipient of the information, the task at hand, and personal preferences for effective communication. (b) **Workplace Culture:** The way communication flows within an organization is expressed through team dynamics and personal preferences. (c) **Communication tools and capabilities:** When selecting a communication medium to exchange and convey information, a design member must consider its capabilities and constraints. (d) **Spatial proximity:** Collaboration is essential in the design industry and is reinforced by access to a centralized office, the customization of activities based on location, and the enduring significance of proximity to team members.	(a) **Early Design Phases:** The focus of identifying and refining key concepts, extensive discussion, and teamwork through highly interactive and collaborative formats. (b) **Latter Design Phases:** As the project advanced, especially during critical decision-making phases requiring client involvement, communication became more formal to effectively convey information to a broader audience, ensuring alignment and understanding among stakeholders. (c) **Microsoft Teams is Versatile:** The use of the platform seamlessly integrating into projects from instant messaging to dedicated channels for file sharing. Its features cater to rapid communication, informality, and personalized configurations throughout the project lifecycle.	(a) **The Places:** The built environment in support of the hybrid work model offers a broad spectrum of diverse space types, sizes, furniture setups, privacy levels, and proximity options to cater to various work styles and individual preferences. (b) **The Platforms:** Technology everywhere and anywhere is not an option. The intentional selection and placement of technology align with the use and flexibility of the journey to the space, the intention of the space it is within, and the knowledge of the users. (c) **The People:** The interaction with design members and teams' interaction shape how work is accomplished, as proximity facilitates chance encounters, learning and collaboration, while occasional distance allows for focus, and separation when needed or required.

 (b) **Workplace Culture. The way communication flows within an organization is expressed through team dynamics and personal preferences.** The preferences and working styles of the design team members involved played a role in selecting a communication medium. Some team members preferred face-to-face interaction, while others favored virtual communication. Most interviewees either directly stated or indirectly inferred that accommodating these project design teams and personal preference dynamics was essential for effective communication. A project architect focused on project design and documentation clearly expressed "The team I am working with" when responding to the most influential factor in selecting a communication medium. The project architect described that understanding personal and teammate's media preferences with the associated time contributed to effective communication along with medium and information exchange alignment.

(c) Communication tools and capabilities. When selecting a communication medium to exchange and convey information, a design member must consider its capabilities and constraints. The availability of different communication tools and platforms and the design team members' proficiency with them influenced the selection of communication medium. Options such as instant messaging, email, video calls, screen sharing, and document collaboration software were available, used, and selected based on the timeliness of providing and receiving a response or exchanging information. The association of time (e.g., time, timeliness, urgent, quick, fast) when selecting and using a medium of choice was mentioned over 1,460 times throughout the interviews. A design architect/project manager focused on project management explains,

> "[…] talking about construction administration, there's a lot less of a collaborative effort that has to occur. So, sharing content back and forth or just being able to review information has a lot less of a time constraint around that because you have a certain amount of days that you have to be able to provide responses to things while in design development or in the earlier stages of the project you're looking for like really quick feedback and fast reaction times."

Additionally, the design architect/project manager stated that urgency and choice of medium, unrelated to a design phase, was a key criterion in their communication process,

> "If it's a [Microsoft] Teams message, I'm looking for a response back from them on whatever information was provided within the next hour. If it's something where I'm just sending general information and I'm expecting a response, but it's not something that's urgent, that's via email. But if it's something that's absolutely urgent, I will likely send a Teams message and then follow up with a phone call."

(d) Spatial proximity. Collaboration is essential in the design industry and is reinforced by access to a centralized office, the customization of activities based on location, and the enduring significance of proximity to team members—however, the importance of physical proximity varied by personal preference and work tasks. Interviewees mentioned the office (e.g., the office, in-office, face-to-face communication) over 1,230 times, second to proximity (greater than 1,460). Site leadership expressed the general importance of proximity,

> "As I mentioned, you get to know people by being around them and seeing them and understanding how they react, […] there are expectations that you have to help you better understand what's happening, what they're saying, to listen more effectively, to learn more effectively or communicate more effectively, transfer knowledge more effectively because you understand a lot more about that person. […] the visibility of people, and the ability for them to come together and learn about each other is really critical for effective communication."

However, while interviewees mirrored leadership's sentiment, they also expressed that increased proximity or isolation (e.g., working remotely, focus room) supported their personal needs, which included references to being introverted (e.g., desire less environmental stimuli), extroverted (e.g., sociable), neurodevelopment disorders (e.g., ADD, ADHD, neurodiversity), and personalities. In response to what aspects of the studio's open office supported the team's communication, an interior designer expressed, "I think that just proximity to others. It is very

easy to turn your head and ask a question, or I often will just say I have a question, and then whoever hears me and can answer will do so. Or being able to quickly walk over".

Additionally, the desired distance for proximity is in conflict; a project architect/ project manager stated, "I find kind of like a hindrance is the fact that we're in such close proximity to each other like we're just like one on top of another." However, he continued, "it's a positive attribute being in close proximity to my team members." There is less conflict about the general types of activities that proximity does not improve the outcomes, including proposal writing before the concept phase, all-day video conference calls, drawing production during construction documents, writing RFI responses during construction administration, and OAC (Owner Architect Contractor) meetings during construction administration. Furthermore, the interviewees expressed the relevance of proximity and highly tactile design tasks, multiple media work sessions, and personal preferences (e.g., personalities, separation of home and work environments, and opportunities to learn in person). It is expected that the role of spatial proximity will evolve as new members join a team, studio, and office, as team members' comfort with current technology grows, and with the capabilities of technology software and platforms increasing.

Implications. This study qualitatively evaluated the perceptions of design team members and identified the factors that contributed to effective communication in their hybrid working environments. Future work will use a social network analysis to complement these perceptions by modeling the design team's communication on various projects. Together, these strands of research, both qualitative and quantitative analyses, can provide a more complete model of hybrid work environments for multidisciplinary design teams in the AEC industry. This model will aid in designing workspaces within a hybrid work model that is more supportive of effective communications.

References

Ancona, D. G., & Caldwell, D. F. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative Science Quarterly*, *37*, 634–666.

Bellman, G. (2000). The Beauty of the Beast. San Francisco, CA: Berrett–Koehler Publishers.

Chong, D. S. F., Eerde, W. van., Rutte, C. G., & Chai, K. H. (2012). *Journal of Product Innovation Management*, *29*(2), 205–215.

Coughlan, J., & Macredie, R. (2002). Effective communication in requirements elicitation: a comparison of methodologies. *Requirements Engineering*, *7*(2), 47–60. doi:10.1007/s007660200004

Ean, L. (2011). Computer-Mediated Communication and Organisational Communication: The Use of New Communication Technology in the Workplace, 3.

Goutam, A. (2013). Effective communication at workplace. *International Journal of Multidisciplinary Research in Social & Management Sciences*, 2(1).

Keller, R. T. (2001). Cross-functional project groups in research and new product development: Diversity, communications, job stress, and outcomes. *Academy of Management Journal, 44*, 547–557.

Norouzi, N., Shabak, M., Embi, M. R. B., & Khan, T. H. (2015). The architect, the client and effective communication in architectural design practice. *Procedia-Social and Behavioral Sciences*, *172*, 635–642.

Sangwan, R. S., Jablokow, K. W., & Defranco, J. F. (2020). Asynchronous Collaboration: Bridging the Cognitive Distance in Global Software Development Projects. IEEE Transactions on Professional Communication, 63(4), 361–371.

Spiliopoulou, G., & Penn, A. (1999). Organizations as multi–layered networks: Face to face, e–mail and telephone interaction in the workplace. Second International Space Syntax Symposium, 1,13.1–13.24.

Verbrugge, L. M. (1977). The structure of adult friendship choices. Social Forces, 56, 576–97.